



Version 2

Base Closure and Realignment Act (BRAC) Cleanup Plan

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**Sacramento Army Depot
Sacramento, California**

*Closed With Dignity
1946 - 1995*

Prepared for:

**U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010**

Prepared by:

**Sacramento Army Depot
Environmental Management Division
and
U.S. Army Corps of Engineers,
Sacramento District**

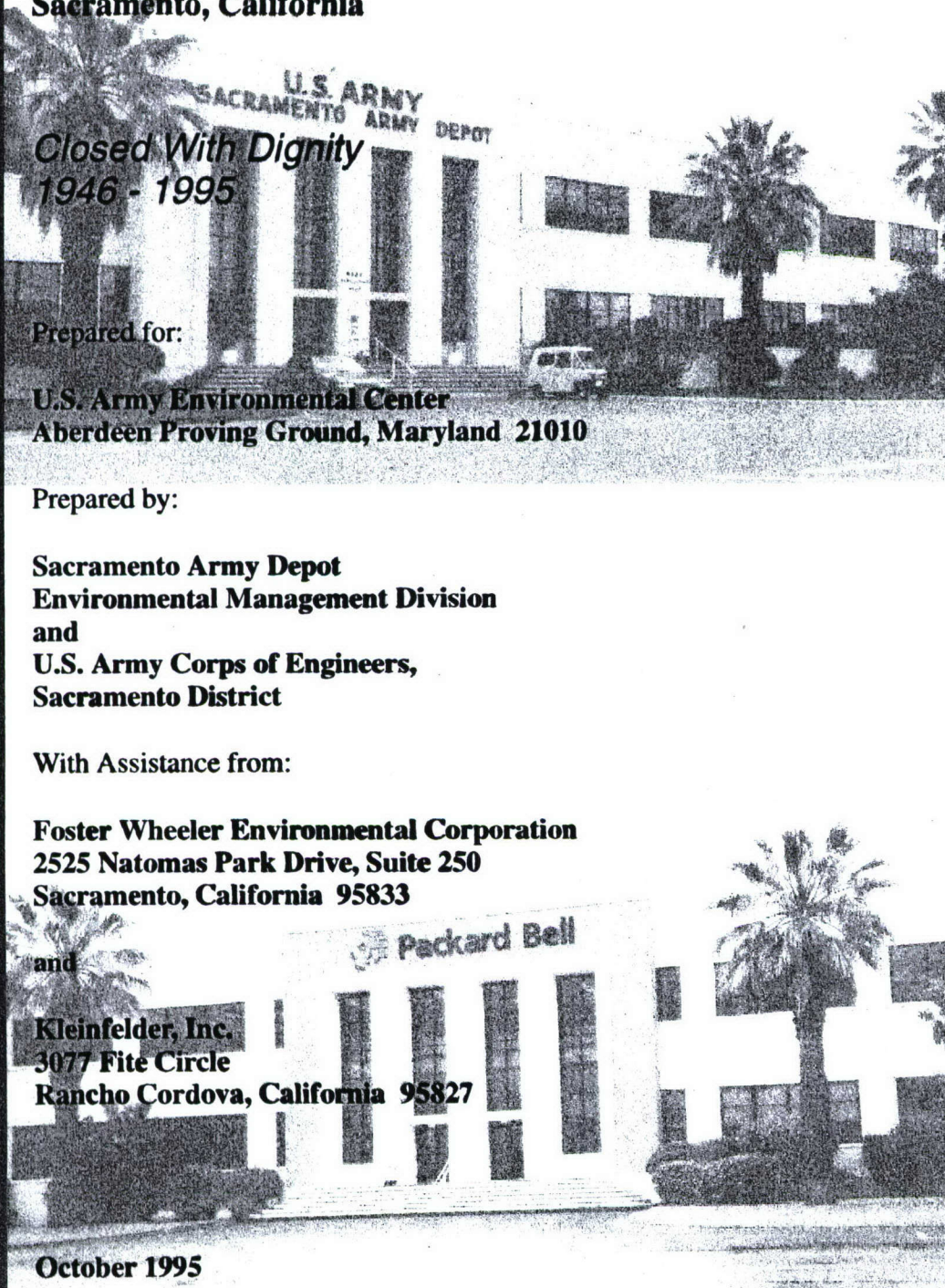
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**Foster Wheeler Environmental Corporation
2525 Natomas Park Drive, Suite 250
Sacramento, California 95833**

and

**Kleinfelder, Inc.
3077 Fite Circle
Rancho Cordova, California 95827**

October 1995





**Environmental
Management
Division**



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BRAC Environmental Coordinator
Sacramento Army Depot Activity

31 OCT 95
Date

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Bottom photo of same building after Packard Bell relocated its World Headquarters to the site.



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Table of Contents

Chapter		Page
	EXECUTIVE SUMMARY	ES-1
1	INTRODUCTION AND SUMMARY	1-1
1.1	Environmental Response Objectives	1-2
1.2	BCP Purpose, Updates, and Distribution	1-3
1.3	BRAC Project Team	1-3
1.4	General History of Sacramento Army Depot	1-4
1.4.1	Depot History	1-4
1.4.2	BRAC I	1-7
1.4.3	BRAC II	1-8
1.4.4	BRAC 91	1-8
1.4.5	The Sacramento Plan	1-9
1.4.6	Desert Shield/Desert Storm	1-9
1.5	Off-Base Property and Tenant Activity	1-10
1.5.1	Benicia Army Cemetery	1-10
1.5.2	Tenant Activities	1-11
1.6	Base Closure Implementation	1-17
1.6.1	Base Operations (BASOPS) Functions	1-18
1.6.2	Transition Planning	1-19
1.6.3	Personnel Issues	1-25
1.6.4	Computer Operations	1-34
1.6.5	Personal Property Disposal	1-36
1.6.6	Facilities Engineering	1-40
1.6.7	Resource Management	1-43
1.6.8	Total Quality Management (TQM)	1-45
1.6.9	Public Relations	1-47
2	PROPERTY DISPOSAL AND REUSE PLAN	2-1
2.1	Status of Disposal Planning Process	2-1
2.1.1	NEPA Process	2-1
2.1.2	Community Reuse Plan	2-5
2.1.3	Disposal Plan	2-5
2.1.4	Community Environmental Response Facilitation Act (CERFA)	2-6
2.1.5	EBS Status	2-6
2.1.6	Radiation Clearance	2-9
2.2	Community Role in Disposal and Reuse	2-10
2.2.1	Formation of the Sacramento Army Depot Reuse Commission	2-10
2.2.2	Marketing Brochure	2-11
2.2.3	Community Reuse Plan	2-11
2.2.4	Sacramento Army Depot Reuse Plan EIR	2-13
2.2.5	Economic Development Activities	2-14
2.3	Relationship to Environmental Programs	2-15

Table of Contents (Continued)

Chapter		Page
	2.3.1 "Take the Lead" Philosophy	2-16
	2.3.2 Dual Effort Approach	2-16
	2.3.3 Agency Review of Documentation	2-16
	2.3.4 Agency Cooperation	2-18
	2.3.5 Funding Approach/Philosophy	2-18
	2.3.6 Depot Support to the Environmental Baseline Surveys	2-18
	2.3.7 Inventory Removal	2-19
	2.3.8 RCRA Facility Closures	2-20
	2.3.9 UST Removal	2-20
	2.3.10 Asbestos and Lead-Based Paint	2-20
2.4	Interim Leasing	2-20
	2.4.1 Report of Availability	2-21
	2.4.2 Environmental Assessment/Finding of No Significant Impact (FNSI) for Outgranting	2-22
	2.4.3 Leasing Execution Plan	2-23
	2.4.4 Finding of Suitability to Lease (FOSL)	2-25
2.5	Property Transfer	2-26
	2.5.1 Property Transfer Methods	2-26
	2.5.2 Property Transfer Requests and Results	2-27
	2.5.3 Finding of Suitability to Transfer (FOST)	2-30
	2.5.4 Infrastructure Disposal	2-31
	2.5.5 Permit Closeout	2-31
3	INSTALLATION-WIDE ENVIRONMENTAL PROGRAM STATUS	3-1
3.1	Environmental Program History and Status	3-1
	3.1.1 Phase I Installation Restoration Program	3-1
	3.1.2 Phase II Installation Restoration Program	3-2
	3.1.3 Remediation	3-4
3.2	Compliance Program Status	3-11
	3.2.1 Storage Tanks	3-11
	3.2.2 Hazardous Materials/Waste Management	3-12
	3.2.3 Solid Waste Management	3-12
	3.2.4 Polychlorinated Biphenyls (PCBs)	3-13
	3.2.5 Asbestos	3-13
	3.2.6 Radon	3-13
	3.2.7 RCRA Facilities (SWMUs)	3-13
	3.2.8 NPDES Permits	3-13
	3.2.9 Oil/Water Separators	3-14
	3.2.10 NRC Licensing	3-14
	3.2.11 Pollution Prevention	3-14
	3.2.12 Mixed Waste	3-15

Table of Contents (Continued)

Chapter		Page
	3.2.13 Radiation	3-15
	3.2.14 Lead-Based Paint	3-16
3.3	Status of Natural and Cultural Resources Programs	3-16
	3.3.1 Vegetation	3-16
	3.3.2 Wildlife	3-16
	3.3.3 Wetlands and Floodplains	3-16
	3.3.4 Designated Preservation Areas	3-17
	3.3.5 Threatened and Endangered Species (State and Federal)	3-17
	3.3.6 Cultural Resources	3-18
3.4	Environmental Condition of Property	3-19
	3.4.1 Areas Where No Storage, Release, or Disposal Has Occurred	3-21
	3.4.2 Areas Where Only Storage Has Occurred	3-21
	3.4.3 Areas Where Storage, Release, Disposal and/or Migration Has Occurred, but Require No Remedial Action	3-21
	3.4.4 Areas Where Storage, Release, Disposal and/or Migration Has Occurred, and All Remedial Actions Have Been Taken	3-22
	3.4.5 Areas Where Storage, Release, Disposal and/or Migration Has Occurred and Action is Underway, But Not Final	3-22
	3.4.6 Areas Where Storage, Release, Disposal and/or Migration Has Occurred, but Required Response Actions Have Not Been Taken	3-22
	3.4.7 Unevaluated Areas or Areas Requiring Additional Evaluation	3-22
	3.4.8 Suitability of Installation Property for Transfer by Deed	3-22
3.5	Status of Community Involvement	3-23
	3.5.1 EIS Process	3-23
	3.5.2 FFA Process	3-24
4	INSTALLATION-WIDE STRATEGY FOR ENVIRONMENTAL RESTORATION	4-1
	4.1 Zone/Operable Unit Designation and Strategy	4-1
	4.1.1 Zone Designations	4-1
	4.1.2 OU Designations	4-2
	4.1.3 Sequence of OUs	4-2
	4.1.4 Early Actions Strategy	4-3
	4.1.5 Remedy Selection Approach	4-3
	4.2 Compliance Strategy	4-4
	4.2.1 Storage Tanks	4-4
	4.2.2 Hazardous Materials/Waste Management	4-4
	4.2.3 Solid Waste Management	4-5
	4.2.4 Polychlorinated Biphenyls	4-5
	4.2.5 Asbestos	4-5
	4.2.6 Radon	4-5
	4.2.7 RCRA Facilities (SWMUs)	4-5

Table of Contents

(Continued)

Chapter		Page
	4.2.8 NPDES Permits	4-5
	4.2.9 Oil/Water Separators	4-6
	4.2.10 NRC Licensing	4-6
	4.2.11 Pollution Prevention	4-6
	4.2.12 Mixed Waste	4-6
	4.2.13 Radiation	4-6
	4.2.14 Lead-Based Paint	4-7
4.3	Natural and Cultural Resources Compliance Strategies	4-7
	4.3.1 Vegetation	4-7
	4.3.2 Wildlife	4-7
	4.3.3 Wetlands and Floodplains	4-7
	4.3.4 Designated Preservation Areas	4-8
	4.3.5 Rare, Threatened and Endangered Species	4-8
	4.3.6 Cultural Resources	4-8
	4.3.7 Other Resources	4-8
4.4	Community Involvement/Strategy	4-9
5	ENVIRONMENTAL MASTER SCHEDULES	5-1
	5.1 Environmental Restoration Program	5-1
	5.1.1 Federal Facility Agreement Timelines	5-1
	5.1.2 Requirements by Fiscal Year	5-1
	5.2 Compliance Programs	5-2
	5.2.1 Master Compliance Schedules	5-2
	5.2.2 Requirements by Fiscal Year	5-2
	5.3 Natural and Cultural Resources	5-3
	5.3.1 Natural and Cultural Resources Schedule	5-3
	5.3.2 Requirements by Fiscal Year	5-3
	5.4 Meeting Schedule	5-3
6	TECHNICAL AND OTHER ISSUES TO BE RESOLVED	6-1
	6.1 Deleting SADA from the National Priorities List	6-1
	6.1.1 BRAC Cleanup Team Action Items	6-1
	6.1.2 Rationale	6-1
	6.1.3 Status/Strategy	6-2
	6.2 ACOE Real Estate	6-2
	6.2.1 BRAC Cleanup Team Action Items	6-2
	6.2.2 Rationale	6-2
	6.2.3 Status/Strategy	6-2
	6.3 Staffing/Funding	6-2
	6.3.1 BRAC Cleanup Team Action Items	6-3
	6.3.2 Rationale	6-3

Table of Contents (Continued)

Chapter	Page
6.3.3 Status/Strategy	6-3
6.4 Contracting After Closure	6-3
6.4.1 BRAC Cleanup Team Action Items	6-3
6.4.2 Rationale	6-3
6.4.3 Status/Strategy	6-4
6.5 RAB/Long-Term Public Involvement	6-4
6.5.1 BRAC Cleanup Team Action Items	6-4
6.5.2 Rationale	6-4
6.5.3 Status/Strategy	6-4
6.6 Long-Term Cleanups/Monitoring	6-5
6.6.1 BRAC Cleanup Team Action Items	6-5
6.6.2 Rationale	6-5
6.6.3 Status/Strategy	6-5
6.7 Radiation Surveys	6-5
6.7.1 BRAC Cleanup Team Action Items	6-5
6.7.2 Rationale	6-5
6.7.3 Status/Strategy	6-6
6.8 Emission Reduction Credits	6-6
6.8.1 BRAC Cleanup Team Action Items	6-6
6.8.2 Rationale	6-6
6.8.3 Status/Strategy	6-6
6.8.4 Final Resolution	6-7
6.9 Data Usability	6-7
6.9.1 BRAC Cleanup Team Action Items	6-7
6.9.2 Rationale	6-7
6.9.3 Status/Strategy	6-8
6.9.4 Final Resolution	6-8
6.10 Data Gaps	6-8
6.10.1 BRAC Cleanup Team Action Items	6-8
6.10.2 Rationale	6-9
6.10.3 Status/Strategy	6-9
6.10.4 Final Resolution	6-9
6.11 Basewide Remedial Action Strategy	6-9
6.11.1 BRAC Cleanup Team Action Items	6-10
6.11.2 Rationale	6-10
6.11.3 Status/Strategy	6-10
6.11.4 Final Resolution	6-10
6.12 Interim Monitoring of Groundwater and Surface Water	6-10
6.12.1 BRAC Cleanup Team Action Items	6-11
6.12.2 Rationale	6-11
6.12.3 Status/Strategy	6-11

Table of Contents (Continued)

Chapter	Page
6.12.4 Final Resolution	6-11
6.13 Excavation of Contaminated Materials	6-11
6.13.1 BRAC Cleanup Team Action Items	6-11
6.13.2 Rationale	6-11
6.13.3 Status/Strategy	6-12
6.13.4 Final Resolution	6-12
6.14 Initiatives for Accelerating Cleanup	6-12
6.14.1 BRAC Cleanup Team Action Items	6-12
6.14.2 Rationale	6-12
6.14.3 Status/Strategy	6-12
6.14.4 Final Resolution	6-13
6.15 Remedial Actions	6-13
6.15.1 BRAC Cleanup Team Action Items	6-13
6.15.2 Rationale	6-13
6.15.3 Status/Strategy	6-13
6.15.4 Final Resolution	6-13
6.16 Review of Selected Technologies for Application of Expedited Solutions	6-14
6.16.1 BRAC Cleanup Team Action Items	6-14
6.16.2 Rationale	6-14
6.16.3 Status/Strategy	6-14
6.16.4 Final Resolution	6-14
6.17 Overlapping Phases of the Cleanup Process	6-14
6.17.1 BRAC Cleanup Team Action Items	6-14
6.17.2 Rationale	6-15
6.17.3 Status/Strategy	6-15
6.17.4 Final Resolution	6-15
6.18 Updating the EBS and Natural/Cultural Resources Documentation	6-15
6.18.1 BRAC Cleanup Team Action Items	6-15
6.18.2 Rationale	6-15
6.18.3 Status/Strategy	6-15
6.18.4 Final Resolution	6-16
6.19 Implementing the Policy for On-Site Decision Making	6-16
6.19.1 BRAC Cleanup Team Action Items	6-16
6.19.2 Rationale	6-16
6.19.3 Status/Strategy	6-17
6.19.4 Final Resolution	6-17
6.20 Community Coordination Regarding Environmental Justice	6-17
6.20.1 BRAC Cleanup Team Action Items	6-17
6.20.2 Rationale	6-18
6.20.3 Status/Strategy	6-18
6.20.4 Final Resolution	6-18

Table of Contents (Continued)

Chapter	Page
6.21 Information Management	6-18
6.21.1 BRAC Cleanup Team Action Items	6-18
6.21.2 Rationale	6-18
6.21.3 Status/Strategy	6-19
6.21.4 Final Resolution	6-19
6.22 Background Levels	6-19
6.22.1 BRAC Cleanup Team Action Items	6-19
6.22.2 Rationale	6-19
6.22.3 Status/Strategy	6-19
6.22.4 Final Resolution	6-19
6.23 Risk Assessments	6-20
6.23.1 BRAC Cleanup Team Action Items	6-20
6.23.2 Rationale	6-20
6.23.3 Status/Strategy	6-20
6.23.4 Final Resolution	6-20
6.24 Protocols for Remedial Design Reviews	6-20
6.24.1 BRAC Cleanup Team Action Items	6-21
6.24.2 Rationale	6-21
6.24.3 Status/Strategy	6-21
6.24.4 Final Resolution	6-21
6.25 Conceptual Models	6-21
6.25.1 BRAC Cleanup Team Action Items	6-21
6.25.2 Rationale	6-21
6.25.3 Status/Strategy	6-22
6.25.4 Final Resolution	6-22
6.26 Cleanup Standards	6-22
6.26.1 BRAC Cleanup Team Action Items	6-22
6.26.2 Rationale	6-22
6.26.3 Status/Strategy	6-22
6.26.4 Final Resolution	6-23
6.27 Hot Spots Removal	6-23
6.28 Identification of Clean Properties	6-23
6.28.1 BRAC Cleanup Team Action Items	6-23
6.28.2 Rationale	6-23
6.28.3 Status/Strategy	6-23
6.28.4 Final Resolution	6-23
6.29 Improved Contracting Procedures	6-24
6.29.1 BRAC Cleanup Team Action Items	6-24
6.29.2 Rationale	6-24
6.29.3 Status/Strategy	6-24
6.29.4 Final Resolution	6-24

Table of Contents

(Continued)

Chapter	Page
6.30 Interfacing with the Community Reuse Plan	6-24
6.30.1 BRAC Cleanup Team Action Items	6-24
6.30.2 Rationale	6-24
6.30.3 Status/Strategy	6-25
6.30.4 Final Resolution	6-25
6.31 Bias for Cleanup Instead of Studies	6-25
6.32 Expert Input on Contamination and Potential Remedial Actions	6-25
6.32.1 BRAC Cleanup Team Action Items	6-25
6.32.2 Rationale	6-25
6.32.3 Status/Strategy	6-26
6.32.4 Final Resolution	6-26
6.33 Presumptive Remedies	6-26
6.34 Partnering (Using Innovative Management, Coordination, and Communication Techniques)	6-26
6.34.1 BRAC Cleanup Team Action Items	6-26
6.34.2 Rationale	6-26
6.34.3 Status/Strategy	6-26
6.34.4 Final Resolution	6-27
6.35 Infrastructure Disposal	6-27
6.35.1 BRAC Cleanup Team Action Items	6-27
6.35.2 Rationale	6-27
6.35.3 Status/Strategy	6-27
6.35.4 Final Resolution	6-28
7 REFERENCES	7-1
Appendix A: Fiscal Year Requirements/Costs	A-1
Appendix B: Installation Environmental Restoration Documents Summary Tables	B-1
Appendix C: Decision Document Summaries/Community Involvement	C-1
Appendix D: Infrastructure Disposal	D-1
Appendix E: Conceptual Site Models	E-1
Appendix F: Approach to Environmental Justice Issues	F-1
Appendix G: 1994 Army Environmental Award	G-1
Appendix H: Property Inquiries	H-1
Appendix I: Glossary of Terms and List of Acronyms	I-1

List of Tables

Table	Page
ES-1 BCT/Project Team Action Items	ES-4
1-1 BRAC Project Team Members	1-51
1-2 Property Acquisition Summary	1-54
1-3 History of Installation Operations	1-56
1-4 Historical Hazardous Waste Generating Activities	1-57
1-5 Off-Base Properties	1-59
1-6 Pre-Closure On-Base Tenant Units	1-60
2-1 Actual Land Use and Employment as of July 1995	2-35
2-2 EBS—Initial Investigation Designations, Study Areas, and Schedule	2-37
2-3 Initial Estimated Building Vacancy Dates	2-38
2-4 History of Legal Agreements/Interim Leases	2-43
2-5 Summary of Conveyance Requests	2-44
2-6 Reuse Parcel Data Summary	2-45
3-1 Previous Investigations at Sacramento Army Depot	3-27
3-2 Solid Waste Management Unit (SWMU) Location Summary	3-28
3-3 Expedited Actions Status	3-29
3-4 Site Summaries by Area Status	3-30
3-5 Future Land Use Risk Assessment for Development of Remedy Selections	3-43
3-6 Human Health Criteria	3-49
3-7 Mission/Operational-Related Compliance Projects	3-49
3-8 Closure-Related Compliance Projects	3-50
3-9 Compliance Expedited Action Status and Underground Storage Tank Inventory ...	3-51
3-10 Historic Aboveground Storage Tank Inventory	3-54
3-11 Historic Non-RCRA Accumulation and Storage Areas	3-54
3-12 Polychlorinated Biphenyls (PCBs) Previously Located at the Depot	3-55
3-13 Buildings Where Friable Asbestos Was Located	3-57
3-14 Surface Water Standards	3-58
4-1 Relationship Between IRP SWMU Sites, OUs, and EBS Study Areas	4-11
4-2 Expedited Cleanup Sequence	4-12
4-3 Environmental Restoration Planned Expedited Actions	4-13
4-4 Environmental Compliance Planned Expedited Actions	4-13
5-1 Federal Facility Agreement Deadlines (Basewide)	5-5
5-2 BRAC Cleanup Team Meeting Schedule	5-6

List of Figures

Figure	Page
1-1 Biosketches	1-61
1-2 Sacramento Army Depot Real Estate Parcel Map	1-69
1-3 Location Map	1-70
1-4 Site Map	1-71
1-5 Aerial Photograph of the Sacramento Army Depot	1-72
1-6 Surrounding Land Uses and SADA Reuse	1-73
1-7 Locations of Historical Installation Operations and Building Construction Times	1-74
1-8 Remediation and Hazmat/Hazwaste Handling/Storage Areas	1-75
1-9 Location of Benicia Army Cemetery	1-76
1-10 Reuse Inquiries	1-77
2-1 Timeline Associated with Disposal and Reuse Process	2-58
2-2 EIS Alternative 1R: Preferred Alternative (Medium Intensity Reuse)	2-58
2-3 Actual Reuse	2-59
2-4 EBS Study Areas	2-60
2-5 Real Estate Process	2-61
2-6 Parcels Initially Requested for Transfer	2-62
3-1 Environmental Timeline	3-59
3-2 Site Location Map RI/FS Sites	3-61
3-3 NFA Sites	3-62
3-4A Locations of Vernal Pool Fairy Shrimp and Active Burrowing Owl Nests	3-63
3-4B Locations of Seasonal Ponded Areas at the B.T. Collins Reserve Training Center	3-64
3-5 Vegetation Map	3-65
3-6 Flood Map	3-66
3-7 CERFA Parcel Designations, Revised	3-67
3-8 Environmental Condition of Property	3-68
3-9 Suitability of Property for Transfer by Deed	3-69
3-10 Environmental Impact Statement Public Involvement Process	3-70
5-1 Projected Master Restoration Schedule	5-9
5-2 Past Restoration Schedule	5-10
5-3 Projected Master Schedule for Closure-Related Compliance Programs	5-11
5-4 Project Master Schedule for Mission/Operational-Related Compliance Programs	5-12
5-5 ACOE Planning Schedule—SADA Studies	5-13
5-6 Environmental Documents for Army Property Disposal or Lease	5-19
5-7 Natural and Cultural Resources Schedule	5-20

Executive Summary

Introduction

This BRAC Cleanup Plan (BCP) contains the status, management, response strategy, and action items related to Sacramento Army Depot Activity's (SADA) past and ongoing environmental restoration and associated compliance programs at the former Sacramento Army Depot site. These programs support full restoration of the Depot, which was and is necessary to meet the requirements for property disposal and reuse activities associated with closure of the entire installation. The scope of the BCP considers the following regulatory mechanisms: the Base Closure and Realignment Act; National Environmental Policy Act (NEPA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Community Environmental Response Facilitation Act (CERFA); Resources Conservation and Recovery Act (RCRA); and other applicable laws and regulations.

Furthermore, this BRAC Cleanup Plan presents, in summary fashion, the status of SADA's restoration and compliance programs and comprehensive strategy for environmental restoration and restoration-related compliance activities. **It describes the BRAC closure process and relates the Depot's success story of being the first BRAC installation to achieve closure and substantial reuse by the private sector.** It also lays out the response action approach at SADA in support of closure, and defines the status of efforts to resolve technical issues so that continued progress and implementation of scheduled activities can occur. The BCP strategy is designed to streamline and expedite the necessary response actions associated with SADA to facilitate the earliest possible reuse activities. The Depot's disposal and reuse was expedited since **all remediation areas have been, or will be, cleaned up to meet residential standards.**

The BCP is a planning document. It has been developed and reviewed by the BRAC Cleanup Team (BCT). However, the information and assumptions presented may not necessarily have complete approval from the Army and/or federal and state regulatory agencies. Although the BCP is a dynamic document that is intended to be updated annually or when major changes occur, due to SADA's closure and disposal, version 2 is the **final update** to this document. This document represents conditions and strategies as of July 1995.

Status of Disposal, Reuse, and Interim Lease Process

The Sacramento Army Depot was closed in September 1994, far in advance of the official BRAC 91 closure date of July 1997. The disposal of the Depot involves three interrelated activities: 1) the NEPA Environmental Impact Statement (EIS); 2) development of a disposal plan; and 3) development of a community reuse plan. The first two items were the responsibility of the Depot. **The EIS was completed upon Mr. Walker's signing of the Record of Decision (ROD) on January 13, 1995. A draft Disposal Plan was prepared in 1994 and updated in April 1995 by ACOE real estate. The Community Reuse Plan was the responsibility of the Sacramento City Reuse Commission, and was adopted on November 1, 1994, with certification by the City of its Environmental Impact Report for the plan.**

The entire SADA installation totaled 487 acres. **On March 3, 1995, the Army transferred 306 acres** (approximately two-thirds of the entire installation) **to the City of Sacramento** by quitclaim deed, under an economic development conveyance. Another 65 acres (for a total of 371 acres) will be transferred to the City when all remedial actions necessary to protect human health and the environment have been taken. Twenty-eight acres are to be transferred under the McKinney Act to the U.S. Department of Health and Human Services (HHS) for use by California Emergency Foodlink. Approximately 8 acres are to be transferred to the U.S. Department of Education for use by California State University, Sacramento, under a public benefit conveyance. The U.S. Navy/Marine Corps received 19.2 acres as part of the federal screening process. The Army has retained 39.1 acres for the Army Reserve Training Center and 22.3 acres for the California Army National Guard.

Status of Environmental Restoration Program

In 1987, the Depot was listed on the U.S. Environmental Protection Agency (USEPA) National Priorities List (NPL), which brought it under the Federal Facilities provisions of CERCLA, Section 120. In 1988, the Army, USEPA (Region 9) and the California Department of Health Services, Toxic Substances Control Division (now known as Cal/EPA) signed a Federal Facility Agreement (FFA), **making Sacramento Army Depot the first Federal Facility to obtain a FFA in the western United States**. Under the FFA, the Army agreed to undertake, seek adequate funding, fully implement, and report on investigations of Specific Areas of Concern identified in the FFA.

The entire 487 acres of the Depot are considered one NPL site. To resolve the difficulties of including all sites in one ROD for cleanup, **four Operable Unit (OU) RODs were developed and signed: Groundwater, Tank 2, Oxidation Lagoons, and South Post Burn Pits**. An additional 49 Installation Restoration Program (IRP) sites, including FFA-designated Areas of Concern, have been investigated at SADA. Two additional sites designated as Solid Waste Management Units (SWMUs) are regulated under RCRA and have not been investigated under the IRP Program. **All major investigations have been completed at the IRP sites and SADA is at the remedial action stage**. Forty-six of the IRP sites are listed as No Further Action (NFA) in the Basewide ROD. All existing OU RODs and NFA sites are included in the Basewide ROD. **The Basewide ROD was completed and signed in January 1995—two years ahead of the FFA schedule**. Since cleanup activities are being expedited, risk to human health and the environment will be quickly reduced and it is anticipated SADA will be eligible for removal from the NPL in December 1996.

Key Restoration and Transferability Strategies and Schedules

The SADA has shifted its focus from the activities of an active depot to compliance and restoration for disposal and reuse of the property. The Depot's active maintenance mission was completed in December 1993 and SADA was closed in September 1994. To facilitate reuse and disposal, a transition force was put in place in May 1994; a reuse/disposal force in October 1994; and a small caretaker force (environmental restoration) in April 1995. The BCP strategies have been, and are currently being, used to focus restoration activities toward final transfer of all

SADA property. **The SADA has been very successful in fast-tracking remediation efforts in coordination with closure requirements.** Through cooperation and teamwork with the regulatory agencies, SADA has signed four OU RODs, initiated or completed site remediations, completed the Basewide Remedial Investigation/Feasibility Study (RI/FS), and signed the Basewide ROD on January 17, 1995. **SADA is the first federal facility with multiple OUs to have a Basewide ROD.** A comprehensive strategy is being developed by the BCT/Restoration Advisory Board (RAB) to be **the first federal facility with multiple contamination sites to be removed (deleted) from the NPL.** Removal requires that all cleanup activities have been initiated or completed and the risk to public health and the environment has been eliminated. The SADA and BCT/RAB have been proactive and aggressive in expediting reuse and clean closure. **The successful reuse and disposal of the Depot, prior to the BRAC 91 required closure date of July 1997 is a reality!**

Summary of Current BRAC Cleanup Plan Action Items

Table ES-1 provides a listing of recommendations and issues associated with environmental restoration, compliance, and technical/management action items. Many have been completed since version 1 of the BCP was published, while others require further evaluation and implementation by the BCT/Project Team. For reference purposes, those completed since version 1 have remained in the chart to demonstrate what progress has been made.

TABLE ES-1
BCT/PROJECT TEAM ACTION ITEMS
(as of July 1995)

Action Item	BCT Action Required	Status	
		In Progress	To Be Performed
COMPLIANCE ACTIVITIES			
Underground Storage Tank (UST) Removal/Compliance			
Removal of prior USTs	None		Completed
Removal of 3 USTs at Building 699 (Gas Station)	None	Removed	95% Complete
Removal of UST at Building 250 (Generator)	None	Removed	95% Complete
Maintain aboveground storage tanks	None	Transferred	Completed
PCB Removal			
Remove PCB-containing transformers	None		Completed
Hazardous Waste/Materials Management			
Closure of RCRA-permitted facilities	Review	✓	90% Complete
EBS building decontamination (non-RCRA cleanup)	None	✓	95% Complete
Contingency spill plan	None		Completed
Wastewater Discharge			
Maintain permits until closure	None		Completed
All wastewater capacity redirected to South Post Groundwater Treatment Plant	None		Completed
Air Emissions			
Maintain permits until closure	None		Completed
Disposal of air credits	None	✓	75% Complete
Asbestos/Lead			
Initial survey of asbestos in buildings	None		Completed
Removal/encapsulation of friable asbestos in buildings that poses a human health risk	None		Completed
Enhanced asbestos survey of buildings	None		Completed
Initial lead-based paint survey	None		Completed

TABLE ES-1
BCT/PROJECT TEAM ACTION ITEMS
(as of July 1995)

Action Item	BCT Action Required	Status	
		In Progress	To Be Performed
Radon/Radiation			
Radon survey of buildings	None		Completed
Building 300 NRC license	None	✓	80% Complete
Solid Waste Management			
Maintain solid waste disposal until closure	None		Completed
Maintain solid waste recycling program	None		Completed
National Pollution Discharge Elimination System (NPDES) Permits			
Maintain permits at Buildings 308 and 416	None	In compliance	Completed
Disposal of NPDES stormwater permit	None		Completed
Obtain permit for the Groundwater Treatment Plant	Review	✓	20% Complete
Oil/Water Separators			
Maintain use until closure	None		Completed
Survey/disposal of separators	None		Completed
NEPA			
Cultural/Archaeological Survey	None		Completed
Initial natural/wildlife/ecological surveys	None		Completed
Updated natural/wildlife survey	None		Completed
EIS ROD for Disposal and Reuse	None		Completed
EBS building-by-building survey (100+ Study Areas)	None		Completed
EIS Preferred Alternative map when city approves final Reuse Plan	None		Completed
Report of Availability for Leasing	None		Completed
Environmental Assessment for Leasing	None		Completed
EBS Finding of Suitability to Transfer/Lease (FOST/FOSL) documentation	Review	✓	80% Complete

TABLE ES-1
BCT/PROJECT TEAM ACTION ITEMS
(as of July 1995)

Action Item	BCT Action Required	Status	
		In Progress	To Be Performed
CERCLA SECTION 120(h)(3) CONSIDERATIONS			
Environmental Condition of Property			
Basewide preliminary assessment	None		Completed
Basewide RI/FS	None		Completed
Basewide proposed plan	None		Completed
OU RODs (4 total)	None		Completed
Basewide ROD	None		Completed
Removal from NPL	Review	✓	50% Complete
Suitability for Property Transfer			
Pilot tests for feasibility	Review		Completed
Site Cleanup thru Investigation (Hot Spots)	None		Completed
OU remedial actions (4 total)	None	3 in progress	1 Completed
Basewide remedial actions	Review	✓	75% Complete
OU remedial action closeouts/verifications	Review	3 in progress	1 Completed
Basewide remedial action closeouts/ verifications	Review	✓	60% Complete
No further action sites	None		Completed
Long-term groundwater monitoring/cleanup	Review	✓	80% Complete
CERFA documentation	None		Completed

TABLE ES-1
BCT/PROJECT TEAM ACTION ITEMS
(as of July 1995)

Action Item	BCT Action Required	Status	
		In Progress	To Be Performed
COMMUNITY RELATIONS			
Basewide ROD for public comment	None		Completed
EIS ROD for public comment	None		Completed
BRAC Cleanup Plan (Versions 1 and 2)	None		Completed
Installation Action Plan	None		Completed
Community Relations Plan	None		Completed
Update and maintain public administrative record	None	✓	On-going
BCT/RAB meetings (teamwork)	None	✓	On-going
Tours, public meetings (program success)	Review	✓	On-going
MANAGEMENT AND ADMINISTRATIVE SUPPORT ACTIVITIES			
Maintain environmental funding at required levels	Review	✓	On-going
Maintain environmental staffing at required levels	Review	✓	2 Staff Members
Database for remediation and disposal	None		Completed
Databases for 3-D graphs (modeling) and for Compact Disk Documentation	None	✓	70% Complete
Infrastructure disposal	None		Completed

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Chapter 1

Introduction and Summary

As a result of past waste and resource management practices at the Sacramento Army Depot Activity installation (SADA or Depot), some areas had become contaminated by various hazardous substances, pollutants, contaminants, or wastes. In response, a number of environmental restoration programs and site cleanups have been initiated at the installation. With the closure of the Depot, use of hazardous materials has ceased and all remaining hazardous wastes are being remediated and properly disposed of.

The purposes of this Base Realignment and Closure (BRAC) Cleanup Plan (BCP) are to update the Version 1 BCP; summarize the current status of SADA environmental restoration and associated environmental compliance programs; present a comprehensive strategy for implementing response actions necessary to protect human health and the environment; and to document the Depot closure story. This strategy integrates activities being performed under the Installation Restoration Program (IRP), the associated environmental compliance programs, and other closure activities, to support full restoration of the Depot. This BCP was updated with information available as of July 1995.

This BCP is a planning document. Information, schedules, and remedial actions (RAs) presented in this document are believed to be accurate and have been reviewed by the regulatory agencies. However, this BCP is designed to be a general representation of documents that have or are being approved by the Army and by federal and state regulatory agencies. It was necessary to make certain assumptions, interpretations, and estimates to develop this BCP. As additional data becomes available, implementation programs and cost estimates could be dramatically altered. This BCP is designed to be a living document.

Chapter 1 describes the objectives of the environmental restoration program, explains the purpose of the BCP, introduces the project team formed to review the program and key individuals involved in the Depot's closure, and provides a brief history of the installation, including closure.

Chapter 2 summarizes the current status of SADA property disposal planning process, describes the Depot disposal process and results, and describes the relationship of the closure and property disposal process with other environmental programs.

Chapter 3 summarizes the current status and past history of SADA IRP and associated environmental compliance programs, community relations activities that have occurred to date, and the environmental condition of the installation property.

Chapter 4 describes the basewide strategy for environmental restoration, including the strategies for dealing with operable units (OUs) on the Depot. This chapter addresses the underground storage tank (UST) program and summarizes plans for managing responses under other compliance programs.

Chapter 5 provides master schedules of planned and anticipated activities to be performed throughout the duration of the environmental restoration program, including associated compliance activities.

Chapter 6 describes specific technical and administrative issues to be resolved, presents a strategy for resolving those issues, and identifies the final results.

Chapter 7 provides a list of reference material that was reviewed relative to this BCP.

In addition to the main text, the following appendices are included in this document:

- Appendix A – Tables presenting funding requirements, as well as a summary table of past costs for the environmental restoration program
- Appendix B – Technical documents and data loading summary, listings of previous environmental restoration program deliverables by program and by site
- Appendix C – Summaries of decision documents (DDs) for which a RA was selected and community involvement information
- Appendix D – Infrastructure disposal
- Appendix E – Working conceptual models for sites, zones, and OUs.
- Appendix F – Environmental justice issues and maps
- Appendix G – 1994 Army Environmental Award
- Appendix H – Reuse inquiries
- Appendix I – Glossary of terms and list of acronyms (fold out)

1.1

Environmental Response Objectives

The objectives of the base closure environmental restoration program at SADA are as follows:

- Protect human health and the environment
- Ensure that the community can fully benefit from the reuse of the property
- Comply with, or where possible exceed, the requirements of existing statutes and regulations
- Conduct all IRP activities in a manner consistent with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA)
- Meet and complete remediation efforts ahead of Federal Facility Agreement (FFA) schedule deadlines as detailed in Chapter 5 of this BCP

- Conduct site-specific Environmental Baseline Surveys (EBSs) to ensure that property transferred or disposed of maintains protection of human health and the environment
- Continue efforts to identify all potentially contaminated areas
- Strive for clean closure property deed transfers as first choice
- Establish priorities for environmental restoration and restoration-related compliance activities (so that property disposal and reuse goals can be met)
- Initiate selected removal actions to control, eliminate, or reduce risks to manageable levels
- Consider future land use when characterizing risks associated with releases of hazardous substances, pollutants, contaminants, or hazardous wastes
- Complete remedial investigations (RIs) as soon as practicable for each source area, zone, or OU, in order of priority (taking into account both environmental concerns and redevelopment plans)
- Develop, screen, and select RAs that reduce risks consistent with statutory requirements
- Complete RAs as soon as practicable, and resolve any long-term groundwater issues
- Establish interim and long-term monitoring (LTM) plans for RAs, as appropriate

1.2

BCP Purpose, Updates, and Distribution

This BCP presents, in summary fashion, the status of SADA's restoration and compliance programs and a comprehensive strategy for environmental restoration and restoration-related compliance activities. It lays out the response action approach at the Depot in support of base closure. In addition, it defines the status of efforts to resolve technical issues so that continued progress and implementation of scheduled activities can occur. The BCP strategy is designed to streamline and expedite the necessary response actions associated with closure of SADA installation and facilitate the earliest possible reuse activities. As a result, risk assessment protocols consider future land uses in exposure scenarios.

This is the final update of SADA's BCP. Copies will be distributed to the BRAC Cleanup Team/Restoration Advisory Board (BCT/RAB) members, Army chain-of-command, other key participants, and contractors referenced in Chapter 1.3. The BCP will also be made available for public review in the SADA administrative record.

1.3

BRAC Project Team

The BRAC project team was established and is currently led by the BRAC Environmental Coordinator (BEC). The BCT includes representatives of the U.S. Environmental Protection Agency (USEPA) Region IX, the California Environmental Protection Agency (Cal/EPA), and the Base Transition Coordinator (BTC). Table 1-1 lists the team members and specifies their

roles and responsibilities. Figure 1-1 presents a summary of those roles. The BCT members include the commander who closed the Depot, LTC Todd Blose; the BRAC Environmental Coordinator, Dan Oburn; a representative from USEPA, Marlon Mezquita; representatives from Cal/EPA, Diana Peebler, Chris Parent and Robert Reeves; and the final Base Transition Coordinator, Roger Staab. Other key members of the BCT include the U.S. Army Corps of Engineers (ACOE), Sacramento District; Kleinfelder Associates, the IRP contractor; and Foster Wheeler Environmental Corporation (Foster Wheeler Environmental), the environmental contractor. Key participants on the RAB include the ACOE, state and federal representatives, members of the community, and technical consultants. RAB meetings are the means of conducting periodic program reviews and reaching consensus on decisions with federal and state regulators and members of the community.

1.4

General History of Sacramento Army Depot

1.4.1

Depot History

The Sacramento Army Depot had its inception as the Sacramento Advanced Communications Zone Depot, which was activated on December 8, 1941, at the old California State Fairgrounds at Stockton Boulevard and Broadway in Sacramento, California. Its purpose was to relieve congestion at the San Francisco Port of Embarkation in the frantic days following the bombing of Pearl Harbor. The parent organization was a general Depot under the Quartermaster Corps of the Western Defense Command, located in the Presidio of San Francisco. In June 1942, the Sacramento Facility was redesignated as the California Quartermaster Sub-Depot. Its mission was to consolidate, pack and ship war supplies to Army bases throughout the west coast and the Pacific Theater.

By the spring of 1942, the Army began dismantling this temporary Depot and most sections were moved to Tracy, California. By June, only the section that handled communications (signal) equipment and supplies remained in Sacramento. In the fall of that year, the signal section, with one military officer and 54 civilian employees, moved from the fairgrounds to an old warehouse rented from the Bercut-Richards Packing Company on North 7th Street in downtown Sacramento. This tiny group continued the job of shipping out radios, telephones and other signal equipment through the spring of 1943, even though the Depot had no official status and only the vaguest of formal instructions as its mission.

Paperwork finally caught up in June 1, 1943, when the War Department formally established the Sacramento Signal Depot and Depot activity increased greatly, packing and shipping supplies to forces in the Pacific. By the end of WWII, workload had increased six times over the 1942 level and over 1,800 workers were assigned to 10 divisions.

As the Depot mission grew, the Army leased additional space in nearby warehouses. Army planners concluded that a larger, more modern facility was needed. Once this recommendation was approved, Colonel John Healy from the Office of the Chief Signal Officer in Washington flew

to Sacramento to begin a search for a new Depot site. Colonel Healy chose a spot near a small Southern Pacific railroad stop called Polk station a few miles southwest of Sacramento. The site was a marshy, low-lying area of open fields surrounded by small truck farms. Construction of the new Depot began in July of 1945 but "Victory over Japan Day" put a hold on all stateside military construction. However, Colonel Healy was able to persuade the top Army Command to continue Sacramento construction and by the end of 1945 the Army began the move to the new facility on Fruitridge Road.

Table 1-2 provides a list of prior property owners. As presented in Figure 1-2, tracts 1 through 10 comprised what became the Sacramento Army Depot. Most of these parcels were used for agricultural purposes prior to being acquired by the Army.

The Signal Depot's original function, as conceived by the Pentagon, was to provide support and services to Department of Defense (DoD) activities on the west coast.

The original (i.e., circa 1945–46) construction included:

- One million square feet of open storage area
- 250,000 square feet of paved storage/parking area
- 50,000 square feet of special shops
- A railway yard capable of holding 150 rail cars
- Housing sufficient to meet the needs of 500 enlisted troops, 500 prisoners of war, and various support personnel
- Support facilities for administration, fire protection, security, garage and shops, utilities, road, and other miscellaneous services

The construction of the Depot was completed on November 1, 1946, at which time it was officially declared the "Sacramento Signal Depot" by the chief Signal Officer. Civilian personnel were then hired, and equipment and materials were purchased and transferred from other Army facilities to begin Depot operations and services. The majority of the civilian employees hired were from the Sacramento area. Military personnel, material and equipment were transferred to the Depot from various military installations around the country. The majority of transferred services came from the California Quartermaster Sub-Depot. During the Korean and Vietnam wars, the Signal Depot expanded its facilities and services commensurate with the country's war effort. In 1951, during the Korean War, a \$10 million "Directorate of Maintenance," facility was constructed at the Signal Depot. During the Vietnam War, the Depot provided support to units in Southeast Asia. Other prominent defense services included highly specialized maintenance and repair work in night vision systems, electro-optics, and laser systems. The most notable function of the Depot was that it became the Army's sole location for repair and overhaul of lasers, thermal imaging devices, and image intensification equipment.

On August 21, 1962, the Signal Depot was renamed the "Sacramento Army Depot," although it was known as the Signal Depot by many Sacramento residents until its closure. This name

change was the result of a reorganization by the U.S. Army Logistics System, headquartered in Washington, D.C. This reorganization gave the U.S. Army Materiel Command (AMC) direct control over the Depot and all similar military depots throughout the country.

The AMC reorganized activities at the Depot and integrated the logistics missions and functions of six former technical services (Signal, Chemical, Ordnance, Quartermaster, Transportation, and Engineering). On June 23, 1973, the AMC and the U.S. Army Supply and Maintenance Command were merged into the U.S. Army Materiel Development and Readiness Command (DARCOM). On March 31, 1977, the Depot was assigned to the U.S. Army Depot System Command (DESCOM). Recently, DESCOM merged with the U.S. Army Armament, Munitions and Chemical Command (AMCCOM) and formed the Industrial Operations Command (IOC).

The 1991 SADA mission statement read: "The Depot's overall mission is to serve as a primary depot for repair, rebuild, and modification of electronic-avionic items, laser range finders, laser target designators, radar sets, gyroscopes, printed circuit boards, thermal imaging systems, night vision scopes, electronic warfare systems, Army and Air Force aid, cryogenic units, and Joint Service Interior Intrusion Detector Systems. The Depot also services the assembly and construction of Quick Reaction Projects such as self-contained radio transmitter sites, and special-purpose fabrication and communication shelters, and serves as a non-distribution supply Depot for electronic-avionic items and cold storage batteries. In addition, the Depot provides installation support to tenant activities and off-base reserve units in the form of maintenance and supply training."

In support of the Depot's mission, past activities included industrial operations with associated waste disposal areas, underground storage tanks and storage/handling areas. Wastes from these normal industrial operations generated hazardous and potentially hazardous wastes including solvents, paints and paint strippers, corrosives, developer and fixers, freon, and perhaps minor quantities of other hazardous wastes. The estimated total quantity of these hazardous wastes averaged 27,000 gallons per year. In addition, approximately 2,000 gallons of waste oil were generated per year (Jacobs 1989). Recognized past industrial waste disposal practices at the Depot are outlined later in Chapter 3.

The Sacramento Army Depot's location, approximately 7 miles southeast of downtown Sacramento, is displayed in Figure 1-3. The Depot's 487 acres are shown in Figures 1-4 and 1-5, and the surrounding industrial operations are shown in Figure 1-6. Table 1-3 outlines the history of Depot operations including the historical hazardous substances activities. Figure 1-7 indicates the general location of the operations and the age of buildings. Hazardous waste generating activities during the period of operations are listed in Table 1-4. The general locations of past hazardous materials storage and waste locations along with current and past remediation areas are shown in Figure 1-8.

The entire 487 acres of the former Sacramento Army Depot installation are currently listed on the National Priorities List (NPL) as a Superfund site. Significant steps in preparing the installation for closure include cleaning up contaminated sites and certifying that lands (including buildings and facilities) are suitable for disposal (deed transfer) and reuse. Certification for property

transfer to a non-federal agency requires a CERCLA Record of Decision (ROD), an Environmental Impact Statement (EIS) ROD, a site-specific EBS, and a Finding of Suitability to Transfer (FOST); while certifications for transfer of title to other federal agencies require only a site-specific EBS and a Record of Environmental Consideration (REC) for a Categorical Exclusion.

Prior to its closure, SADA was zoned M-2 (SPD) (heavy industrial, Special Planning District) and designated Public/Quasi-public in the City of Sacramento General Plan. This classification was consistent with surrounding uses. On November 1, 1994, the City's General Plan and the South Sacramento Community Plan were amended as part of the City's Reuse Plan. At that time the site was rezoned. The General Plan amendment changed 406 acres from quasi-public miscellaneous space to 83.1 acres of parks, recreation, and open space (rezoned as agriculture-open space) and 322.9 acres of industrial (rezoned as heavy industrial space).

On March 3, 1995, more than two years ahead of schedule, approximately two-thirds (about 306 acres) of SADA was transferred to the City of Sacramento under an Economic Development Conveyance. Another 65 acres are scheduled to be transferred during the federal 1995-96 fiscal year, once all remedial action necessary to protect human health and the environment has been taken. The City of Sacramento has entered into a long-term lease of most of the property with Packard Bell Electronics (Packard Bell), the largest manufacturer of home computers. Packard Bell has relocated its company headquarters to the site and is currently assembling computers at that location.

The Army retained 61.4 acres in the southeast corner of the installation for the Reserve Enclave. It is comprised of 39.1 acres for the Army Reserves and 22.3 acres for the California Army National Guard. Accountability was transferred to the U.S. Property and Fiscal Officer and a license was issued to the National Guard during the first part of 1994.

1.4.2

BRAC I

Prior to BRAC I, the base closure process had become stalemated. Congress passed Section 2687 of Title 10, United States Code (10 USC 2687) in 1977 in response to a large number of base closures in the 1960s and 1970s, and accusations that the closures were influenced by political considerations. It required DoD to notify Congress if an installation became a closure candidate and also applied the National Environmental Policy Act (NEPA) to base closure recommendations. These stipulations effectively prevented any further base closures.

Still, base closures were obviously required to rid DoD of unnecessary or excess capacity and to thus conserve defense appropriations. Therefore, on May 3, 1988, the Defense Secretary's Commission on BRAC was chartered. In October 1988, Congress passed, and President Reagan signed, Public Law 100-526, the Defense Authorization Amendments and Base Closure and Realignment Act.

The first round of base realignment and closure (BRAC I) recommended that 86 bases be closed fully and 59 others be closed partially or realigned. Nearby Mather Air Force Base (AFB), located in Sacramento County about 5 miles from the Depot, was scheduled for closure during this round. While the operations at Mather have closed, disposal of the real estate has not been completed. Difficulties have arisen concerning site cleanup and transfer methods, which have caused friction and community distrust in the closure process. While the SADA closure did not raise issues related to reuse of a golf course or airfield as Mather's closure had, Army and City of Sacramento officials nonetheless viewed the experiences at Mather as problems they wished to avoid repeating.

1.4.3

BRAC II

In January 1990, Secretary of Defense Cheney proposed closing 36 additional bases. This initiative became known as BRAC II. Under review by the Army for closure in BRAC II were Ft. Ord and the Sacramento Army Depot. Congressional response stopped the implementation of these recommendations but set the groundwork for a second Base Realignment and Closure Commission (Commission). This Commission was chartered under the Defense Base Realignment and Closure Act of 1990, Public Law 101-510, which provided for three commissions: 1991, 1993, and 1995. In each of these years, the same process would be followed. DoD would recommend a list of bases to be closed and realigned, the Commission would review this list and all other options, the Commission would recommend a list to the President who would accept or reject the entire list, and the President would send the list to Congress who would accept or reject the entire list. Once accepted, the list would become law.

1.4.4

BRAC 91

The Sacramento Army Depot was on the list of installations recommended for closure by DoD to the 1991 Base Realignment and Closure Commission. Although the closure was vigorously opposed by the community and congressional delegations, the Depot remained on the final list sent to the President and Congress. As part of the SADA closure recommendations, the decision to compete the Depot workload allowed a significant number of employees to transfer across town when McClellan AFB won major portions of the Sacramento Army Depot Workload. The Commission recommendations regarding workload competition, which subsequently became law, relating to Sacramento were:

"The Commission finds that DoD deviated substantially from criterion 5 (return on investment). Therefore the Commission recommends the closure of Sacramento Army Depot and the realignment of its workload by competition to ensure the most cost effective distribution of work. The Secretary of Defense will develop statements of work and a plan to conduct a public-public competition. This competition will determine how best to distribute the workload currently performed at Sacramento Army Depot, among those depots in the DoD plan (Tobyhanna Army Depot, Anniston Army Depot, Corpus Christi Army Depot, Red River Army Depot, Letterkenny Army Depot) and the Sacramento Air Logistics Center at McClellan Air Force Base. The

implementation plan will include the logical groups of items to be competed, a time-phased schedule, and source selection criteria. The competition will begin as soon as possible. The Communications Systems Test Activity (1118th Signal Bn.) from Sacramento Army Depot will be realigned to Fort Lewis, Washington. As many as 50 acres of Sacramento Army Depot may be retained for Reserve Component use. The residual supply mission at Sacramento Army Depot will be transferred to the Defense Depot West at Sharpe Depot or Tracy Depot.”

1.4.5

The Sacramento Plan

The Sacramento Plan was developed by the Sacramento City and County Base Realignment Committee to offer an alternative to the BRAC 1991 listing of Sacramento Army Depot for closure. This extensive and well documented plan supported the closure of Sacramento Army Depot but recommended allocation of the former Depot workload largely to the Air Logistics Center at McClellan AFB, also located in the City of Sacramento. It also recommended consolidating the DoD electronics workload from 10 centers into two centers, one east and one west, Tobyhanna Army Depot in Pennsylvania and McClellan AFB in Sacramento. This plan was partially implemented by the BRAC Commission, as it directed that the workload at Sacramento Army Depot be competed between five Army maintenance depots and McClellan AFB. McClellan ultimately won much of the former Depot workload during the competition.

While the Sacramento Plan was at least partially successful in retaining some jobs in Sacramento after SADA's closure, Sacramento City and County officials encountered continuing difficulties keeping McClellan AFB off subsequent closure lists. McClellan was added to the Air Force's recommendations for closure in BRAC 93, but was removed by the Secretary of Defense. The 93 BRAC Commission still reviewed McClellan and other Air Force Air Logistics Centers (ALCs) but did not recommend closing McClellan. In BRAC 95, the Air Force did not recommend closing any ALCs but the Commission added ALCs to their deliberations and voted to close two of them: McClellan and Kelly.

The ultimate decision to close McClellan was not certain as planning for SADA reuse was taking shape, but the potential for cutbacks or closure at McClellan was recognized by City officials, and this provided extra incentive to establish a strong jobs-centered reuse plan for the Depot.

1.4.6

Desert Shield/Desert Storm

Even though the Depot was being considered for closure during the events of Desert Storm, the Depot and its employees played a significant role in DESCOM's mission of providing repair and supply support to deployed forces. At the direction of DESCOM, an Emergency Operations Center was set up in Building 150 and twice daily briefings were provided to the Depot Commander and staff. These briefings continued through Desert Shield and Desert Storm. Over 100 Depot employees (military and civilian) were actually deployed to Desert Storm where they were part of the DESCOM forward deployed Depot. Employees repaired equipment of the same type normally overhauled at Sacramento, i.e., night vision equipment, radar units of various types,

and comsec equipment. The employees remaining in Sacramento also provided vital support to the war effort. Maintenance produced over 11,000 items of equipment for Desert Storm including night vision devices (6,714), avionics (1,962) and communication shelters and systems (1,271). Supply shipped over 2,000 short tons including over 500,000 batteries. These outstanding accomplishments in support of Desert Storm speak highly of the loyal and dedicated nature of the Depot workforce, especially in light of the ongoing discussions being held at higher Army headquarters about closing the Depot.

1.5

Off-Base Property and Tenant Activity

1.5.1

Benicia Army Cemetery

As listed in Table 1-5, the Benicia Army Cemetery (Figure 1-9) was the only subinstallation of the Sacramento Army Depot Activity. Benicia Army Cemetery is the oldest U.S. military post cemetery in the Pacific States. It served the Benicia Arsenal, which operated between 1850 and 1964, and the Benicia Barracks, which operated between 1849 and 1909. It is located in the city of Benicia, Solano County, California. The cemetery covers approximately one acre and has been maintained in immaculate condition by an Army contractor. The cemetery is listed on the National Register of Historic Places as part of the Benicia Arsenal/Benicia Barracks National Register District. There are 211 human interments; 123 are U.S. military personnel, 61 are civilians, 9 are prisoners of war, and 18 are of unknown affiliation. There are also 3 pet interments. Information on the cemetery, history, and a detailed account of human interments can be obtained from the Historic Resources Management Plan held by the ACOE, Sacramento District.

After the closure of the Benicia Arsenal in 1964, the Benicia Army Cemetery was managed by the Sacramento Army Depot. Management consisted of administering a contract for upkeep of the cemetery grounds and participation in various ceremonies associated with the facility. Ceremonies included participating yearly with the German Consulate in San Francisco to honor German soldiers interred at Benicia during World War II.

The Facilities Engineer at the Depot also held the real estate documentation for the property. When closure of the Depot was announced, a request was sent to DESCOM on June 13, 1993, to transfer responsibility for the property to another activity. This request was reviewed by DESCOM and AMC for the next 18 months with no resolution. With the transfer of the Depot to the City of Sacramento nearing, LTC Blose (Commander of SADA) informed the Tooele Complex Commander that the documentation for the property would be forwarded to higher headquarters for accountability if no resolution was approved by the transfer. Ultimately, the property records were transferred to the Sierra Army Depot. The ACOE, Sacramento District, agreed to administer the contract for maintenance and to participate in any required ceremonies at the site.

1.5.2

Tenant Activities

Table 1-6 lists the significant tenant organizations during the last year of full operations. Environmental impacts of tenant activity are outlined below with general information about each.

The Defense Logistics Agency (DLA) used hazardous materials in its operations. It received, stored and issued repair parts and supplies for Army strategic communications, electronics, night vision, electro-optics, laser, phased array radar, and avionics systems. The 1118th Army Signal Battalion installed, operated, and maintained Army communication systems throughout the world. Its facilities included a motor pool. The U.S. Army Test, Measurement, and Diagnostic Equipment (TMDE) Support Center—Sacramento provided calibration and repair services for dosimeters. Its facility (Building 300) contained several types of radionuclides. The U.S. Army Health Clinic promoted health and fitness of civilian employees of the Depot. Its facility contained chemicals typical of a medical facility. The Army and Air Force Exchange Service (AAFES) operated a gas station on the southeast portion of the post. The gas station contained three USTs (all of which have been removed). The Navy/Marine Reserve Training Center operations also contained a motor pool. As of December 1994 there were no remaining tenants.

1.5.2.1

1118th Signal Battalion

The 1118th Signal Battalion was the only active duty military unit assigned to the Depot. This unit had the worldwide mission of installing, operating and maintaining military communications and communications security equipment. The BRAC 91 directed that the unit be relocated to Fort Lewis, Washington, but due to continued Army downsizing, the unit was disbanded in place and the colors retired. The unit's authorized end strength for fiscal year 1991 was 260 military personnel.

1.5.2.2

Television-Audio Support Activity

The Television-Audio Support Activity (TASA) provides design, engineering, technical, maintenance, logistical, and procurement services to Army, Navy, and Air Force Armed Forces Radio and Television Stations (AFRTS) around the world. Personnel assigned to TASA also design and supply audio and video equipment and systems, cameras, studios, conference rooms, and video-teleconferencing centers to DoD customers and language laboratories to foreign allies. TASA's major customers include the Armed Forces Radio and Television Service, Voice of America and the U.S. Navy.

Since TASA would remain as an activity after Depot closure, work began immediately after the base closure to find a new site of operations in the local area. Initially, TASA hoped to be able to remain in the same location in Building 150 the organization had occupied for a number of years but as reuse opportunities began to surface, it was evident that the activity would have to move. Another reason for moving was the relocation of the DLA warehousing activity which supported

TASA to McClellan Air Logistics Center. The location of first choice for TASA was to relocate to McClellan AFB near the DLA warehouse. This appeared promising initially since a building was identified as available for occupation after some upgrade and renovation. However, during the building renovation, a significant low-level radiation contamination problem was discovered and a new interim location was needed. With Packard Bell's use of Building 150 at the Depot looming, TASA was able to relocate to the closed Mather AFB in November 1994 and complete its move by December 1994. The agreement at Mather allows TASA to stay for at least 2 years while renovation is being completed on its new home at McClellan. TASA had 130 employees (122 civilian and 8 military) when the organization relocated from the Depot in the fall of 1994.

TASA's future home again became uncertain with the BRAC 95 announcement of the pending closure of McClellan. The building at McClellan AFB that TASA was scheduled to move to was being renovated for TASA partly with Army BRAC funds, and partly by the Air Force for joint usage. Closure of McClellan AFB puts the Air Force investment in the building renovation in doubt, and full renovation to meet only TASA's occupancy may be too expensive. This issue remains unresolved at the time of this writing.

1.5.2.3

Navy Broadcasting Service

The Navy Broadcasting Service is a small office that works closely with TASA to support Navy broadcasting systems. This activity moved to McClellan AFB in warehouse office space that holds equipment and supplies for the activity. There are two civilian and nine military employees authorized.

1.5.2.4

Health Clinic

The health clinic was a vital part of the Depot for many years. It promoted the health and fitness of military and civilian employees of the Depot through treatment of on-the-job illnesses or injuries requiring emergency treatment, pre-placement and work-related medical examinations, and referral of employees to private physicians and dentists. The clinic also provided ambulatory health care to eligible beneficiaries within the capability of its staff. The health clinic had 14 civilian employees at the end of 1991.

As the Depot grew smaller, the health clinic staff was likewise reduced. After September 1994, the Depot received medical support through an Inter-Service Support Agreement with the health clinic at McClellan AFB.

1.5.2.5

Army/Air Force Exchange Service

The Army/Air Force Exchange Service maintained a gas station and a small retail outlet in Building 680 prior to Depot closure. The gas station was closed in the 4th quarter fiscal year 1994, and a reduced retail operation is open only on drill weekends to support the Reserve Enclave.

1.5.2.6

Schools Federal Credit Union

Schools Federal Credit Union had a major service location at the Sacramento Army Depot for Depot employees. This was closed in the spring of 1994 and combined with other operations in the community.

1.5.2.7

U.S. Army TMDE—Area Calibration and Repair Center

The TMDE—Area Calibration and Repair Center was a major tenant at the Depot with over 60 personnel assigned at the time of the closure announcement. This organization was vital to the maintenance mission of the Depot since many industrial operations depended on the accuracy of test, measurement, and diagnostic equipment (TMDE) and many quality verifications were not possible without valid certifications on the testing apparatus. TMDE had an entire facility (Building 300) dedicated to this mission and several satellite locations in the maintenance areas. The TMDE facility, because of the use of low-level radiation and an accompanying Nuclear Regulatory Commission (NRC) license for testing, was the site of extensive evaluation during the environmental review of the Depot and became the site for some limited cleanup actions. TMDE was phased out as the maintenance mission was closed with all personnel and material movements completed in June 1994. The facility cleanup was completed in late fiscal year 1995 and is awaiting NRC license clearance.

1.5.2.8

Operation Santa Claus

Operation Santa Claus is a non-profit organization that passes out food boxes at Christmas for needy families. With the Depot closure the organization was asked to find a new location to warehouse its food and supplies. After a long search, and under pressure from the Depot to vacate the premises for cleanup and transfer to the City of Sacramento, Operation Santa Claus found a new home at McClellan Air Logistics Center. It was able to distribute food during the 1994 Christmas season from the new location.

1.5.2.9

Naval and Marine Reserve Center

The U.S. Navy/Marine Corps became a Depot tenant in 1976 with a mission to provide training for Navy and Marine Corps personnel. It retained its location at the southwest corner of the installation. The Navy/Marine Corps applied during the DoD screening process to take title to its site (19.2 acres) and the site was transferred to the Navy on April 17, 1995.

1.5.2.10

Boy Scouts

Boy Scout Troop 13 was a long-established troop that met on south post. With the Depot closure imminent, they were reluctantly asked to move off post in the summer of 1993. The troop began to meet in Tahoe Park but may be allocated space at the Navy/Marine Corps Reserve Center.

1.5.2.11

American Red Cross

The American Red Cross used a portion of Building 251 for storage of relief and emergency supplies to be used on a regional basis. It was difficult to move the American Red Cross out as a tenant activity since they were relocating from virtually free warehouse space. With some assistance from the Depot Commander and a new requirement to sign lease documents and pay for warehouse space, the agency decided to vacate and moved its supplies off the Depot.

1.5.2.12

Defense Distribution Region West (DDRW)

The DDRW presence at the Depot grew out of the Directorate for Supply. As part of a test for the consolidation of supply missions at the DoD level, the Depot Supply Directorate was transferred on-site to the DLA in 1992. DDRW was the activity of DLA created to manage supply and distribution missions on the west coast. DDRW was both a tenant and an activity providing support to the Depot. The DDRW mission included storing wholesale supplies for National Inventory Control Points, receiving, issuing and storing supplies supporting the Depot maintenance mission and providing all shipping and transportation support to the Depot and other area activities. DDRW occupied Buildings 242, 244, 246, 263, parts of 251, 253 and 255, and portions of many other buildings and large amounts of outside storage space.

Closure was a very significant mission for DDRW since the activity had to support the Depot closure, simultaneously transfer all wholesale supplies stored at Sacramento to other locations, and manage its own employees through several reductions in force (RIFs). In October 1992, DDRW had over 136,000 individual lines of equipment in storage at the Depot that had to be removed by the closure date. Timing was very critical since DDRW often could not completely draw down a line of equipment until the supported Depot operation was closed. The DLA areas were cleaned and cleared by the end of September 1994 with the help of several General Officer

letters supporting the expedited movement of supplies,. This effort was exceptional considering the rapid loss of personnel who transitioned to other DLA activities or to other jobs.

In addition to the DDRW mission, the Defense Reutilization and Marketing Office (DRMO) acted as the disposal agent for all items in excess of the Army's needs. All items identified as excess were sent through the DRMO process to either identify a government agency that required the item, a local or state agency that had a requirement, or to excess the item for sale. DRMO established an office at the Depot that greatly expedited disposal of items and reduced transportation costs. There was also a scrap area where recycled metal and other items were sold to bidders.

1.5.2.13

California National Guard

The California National Guard was not a Depot tenant until the establishment of the Reserve Enclave was nearly completed. During the summer of 1993, the National Guard requested, and the Depot approved, the transfer of the Morale Support activities located in Building 677 and allowed the National Guard to use the facility for a youth activities program. All costs associated with building use were reimbursed to the Depot. The transfer of the property in the Reserve Enclave to the federal agency managing real estate for the National Guard was completed on October 13, 1994.

1.5.2.14

U.S. Army Reserve Training Center

The Army established two High Technology Training Centers, one at Tobyhanna Army Depot and one at the Sacramento Army Depot. Each depot was a repair center for high technology Army signal and electronic equipment. These centers trained reserve units in the United States on the maintenance and repair of key components of Army communication and surveillance systems. Depot personnel who actually performed overhaul and repair of equipment were assigned to help teach the equipment to soldiers in units attending training at the High Technology Centers.

When the Depot closure became imminent, the decision was made to transfer the High Technology Center at Sacramento to Forces Command. After a long series of meetings and negotiations, the unit transfer became effective September 16, 1993. The center was assigned to the 124th ARCOM in Ft. Lawton, Washington. Thereafter, the Reserve Center was a tenant activity at the Depot. Transfer of the land and facilities continued to be discussed and the transfer took place on September 30, 1993. The land authorized in the original Base Closure Directive for a reserve center was actually split between two organizations, the U.S. Army Reserves and the California Army National Guard. The actual acreage conveyed was greater than that authorized by the Base Closure Commission because it included unusable acreage for the Morrison Creek easement that bordered the parcels.

The U.S. Army Reserve intends to construct an area reserve center in the Reserve Enclave before the year 2000. Planning is already underway and funding has been identified in the major

construction budget. The proposal is for a center that will consolidate up to 15 reserve units into one facility with over 1,600 reserve personnel, 30+ active duty personnel and 40+ civilian employees. Planning activity is focused on development given the constraint of the vernal pool fairy shrimp presence, which is a Federally listed threatened species.

To provide needed building space until completion of the new reserve center, the U.S. Army Reserve requested interim use of other space on the Depot property. Initially, a General Officer Steering Committee recommended that the Reserves be allowed to occupy the main administration building, Building 150, and the Hannum Hall area until the new center was built. However, the City and Depot recognized the impact that use of Building 150 would likely have on reuse, and proposed that the area being vacated by the 1118th Signal Battalion would better meet the Reserves' needs, and have much less impact on projected reuse. The Reserves were thus given permission to occupy the former 1118th area at the east end of Buildings 255 and 257 and the adjacent motor pool area, as well as to continue to occupy the Hannum Hall area.

Packard Bell's interest in the property became known in mid-1994, and the large operation it envisioned on the site was more far reaching than previously anticipated for reuse of the buildings. In particular, the former 1118th area was key to Packard Bell's operational and traffic flows. Thus, the City, Reserves, ACOE, the Depot BTC and Commander met to discuss alternate sites for the Reserves interim use. The City had negotiated a change of location for California State University, Sacramento (CSUS), to Building 320, the former Directorate of Maintenance building. Since CSUS would not need the building until later, the City brokered a deal with CSUS making that building available to the Reserves to complete the fielding of and training on some new equipment for Reserve units until June 1995. The City also agreed to allow the Reserves to stay rent-free in the Hannum Hall area until the projected date for completion of the new Reserve Center. These agreements were documented in a separate Memorandum of Agreement (MOA) prepared by the Depot BTC and signed by the Reserves and the City. The terms were also incorporated into the documents conveying property to the City under the economic development conveyance. Based on these agreements, the Reserves vacated the 1118th area in late 1994 and moved into Building 320 or other buildings within the Reserve Center footprint. In June 1995, the Reserves vacated Building 320 and now occupy only buildings within the designated Reserve enclave and in the Hannum Hall area.

1.5.2.15

U.S. Army Information Systems Command

The U.S. Army Information Systems Command was initially a major tenant activity at the Depot with 199 personnel authorized at the end of 1991. These personnel operated the computer room and the other automated systems at the Depot. Most of these missions and the associated personnel were transferred to the Depot during a 1992 restructuring that created the Directorate for Information Management for these positions. The rest of the positions, especially those associated with maintaining the programs of standard Army systems were transferred to a consolidated development activity at Chambersburg, Pennsylvania.

1.5.2.16

California Emergency Foodlink

California Emergency Foodlink was a successful McKinney Act applicant through the Department of Health and Human Services (HHS). Foodlink is a non-profit activity dedicated to transporting donated and federal commodities to food banks throughout California and to providing long-term paid job training. Foodlink was approved to receive two of the large warehouses at the Depot (Buildings 244 and 246), the former automated data processing center (Building 245), a cold storage warehouse (Building 247), a storage shed (Building 243), and the truck scales.

Foodlink obtained an interim license from SADA and relocated to the Depot in 1994. The move enabled Foodlink to expand its operation. It has created 63 new jobs for the homeless, former Depot employees, and other unemployed, and expanded service from 13 to 37 interfaith Sacramento food closets serving the needy in the community.

Foodlink will receive the property at no cost from HHS with the requirement that the property be used solely for homeless assistance purposes. It will be required to conform its facilities to state and local building codes. In addition, Foodlink must construct separate utility lines to its property or share in the cost of improvement to the infrastructure to ensure continued utility service. Resolving these issues with the City will likely be a lengthy and difficult process.

1.6

Base Closure Implementation

Regardless of the traditional mission of an activity, closure quickly becomes the primary mission when the results of the Base Closure Commission are announced. This section describes how the Depot management organized the closure and covers major actions that took place during the closure.

A major point of emphasis throughout this document is the **close coordination needed between all parties to make a base closure a success**. The chapter on community activities outlines actions taken by the Sacramento community leadership prior to closure. Almost any closure will be initially opposed by the community and activity personnel will play a role either officially or unofficially in providing backup documentation for this opposition. During this initial stage it is difficult for the activity leadership to develop contingency plans for closure as these are seen as disloyal or disruptive to the effort to oppose the closure. However, strategic planning at this stage can be very beneficial to maintaining control of the closure if it becomes inevitable. In addition, early planning and advanced approval of employee options during closure can greatly benefit the workforce in the long-run.

1.6.1

Base Operations (BASOPS) Functions

BASOPS functions include all non-mission areas and are analogous to overhead in a civilian business. They include many critical functions such as finance, personnel, security, facilities management and contracting. At a DoD depot or activity operated under the Defense Business Operations Fund (DBOF), all industrial work is financed by customer work orders based on a complex rate structure developed in the previous fiscal year. Funding for BASOPS functions at the Depot or activity is included as overhead in the rate charged to customers.

BASOPS functions are especially critical during closure. In fact, closure creates a reversal in the traditional roles of BASOPS versus mission. Prior to closure, BASOPS exists to support the mission. After closure, BASOPS is the mission, and the functions remain essential to the closure mission until transfer of the facility to the reuse entity. Yet, personnel who work in these areas are probably the most mobile in the workforce. Specialists in the areas of finance, personnel and contracting are universally used in both public and private business and are in high demand even during periods of recession. The best personnel in each of these areas are generally the first to receive offers to move to new locations, often even before formal announcement of the closure. **A plan must be developed very early in the closure process to maintain BASOPS viability throughout the closure or the process will be very difficult to accomplish on any time schedule.**

In 1992, the Commander of the Sacramento Army Depot along with the members of the Executive Steering Committee (ESC), were faced with significant personnel losses in many areas of Depot operations. Of the methods available to continue support to Depot personnel and to meet mission requirements in resource management, personnel and other BASOPS areas, becoming a Depot activity under a "mother" depot seemed to be the most attractive. An initial transition plan was developed in November 1992, that laid out the reasons for transitioning the Depot from full depot status to depot activity status under the Tooele Army Depot. This very extensive plan, called the "A, B, C Plan" was developed by the Integrated Logistics Support Office chief, Mr. Guy Brown in coordination with managers from Tooele. It laid out each specific task in BASOPS support for the Depot and identified the office at Tooele that would take over the task when support from Sacramento was no longer available. Depot activity status was approved by DESCOM and implemented for the staffs in April 1993. It was formally blessed during the change of command in July 1993 between COL Grundy and LTC Blose. While this plan offered backup support, little support was actually needed due to the orderly downsizing of Depot BASOPS functions, and the capability of the Depot to retain key personnel until mission areas were closed out. Only the Depot contracting and legal departments completely transitioned to Tooele. SADA also received support in the areas of Morale Support and Equal Employment Opportunity. Subsequent RIFs at Tooele and the realignment of that depot directed by the BRAC 93, degraded the capability of Tooele to provide extensive support to SADA. SADA's dedicated remaining staff filled capability gaps (in many cases cross-training into an entirely new skill area) to ensure a successful closure.

1.6.2

Transition Planning

1.6.2.1

Initial Planning

Initial planning for closure at the Depot took many forms. Key planning activities were: ESC planning, developing personnel plans to support closure, developing the necessary funding for closure planning, public relations planning with the community and Depot employees, planning for all necessary environmental actions, and planning how to accomplish the competition of Depot workload. It is very important to remember that closure greatly affects the local community.

Throughout the Depot closure, close coordination between the community leadership, ACOE staff, Depot staff, regulators and contractors allowed the process to stay on track and to adapt within an evolving DoD closure process.

1.6.2.2

Executive Steering Committee

The ESC was initially the oversight committee for the implementation of Total Quality Management (TQM) at the Depot. After the base closure was announced, it became the senior management forum for managing the closure. Each department chief in the ESC was tasked to analyze his/her area of responsibility in depth, identifying critical skills and tasks and developing alternatives to the loss of key personnel. Each plan received frank analysis from the entire committee regarding its effectiveness, completeness and synergism with planned alternatives. This coordinated review was extremely critical since decisions could be made with a complete view of the Depot closure process rather than focusing solely on specific problems in each area. Consolidated recommendations were developed and implemented during the initial ESC meetings and the performance and problems of each functional area were reviewed at least monthly by the ESC. These meetings were always attended by the commander if available and it was clear to everyone that this was the key planning organization for the Depot. **The frank analysis of problem areas, the shared solutions developed and the camaraderie of this organization were key elements in the success of the Depot's closure.**

1.6.2.3

Coordination with Community Leadership

Coordination with community leadership began informally during development of agendas for the Capitol-to-Capitol visits by leaders in the Sacramento community. The capitol-to-capitol visits are yearly trips by Sacramento leaders to Washington, D.C. to lobby the legislature on issues important to the local area. However, during the early years of the BRAC process when Sacramento was initially being considered, official coordination with the community to oppose closure was considered disloyal to the command. The restrictions placed on all commanders throughout the nation made local cooperation difficult and often made real planning for closure difficult. It was eventually realized that a base closure could not be accomplished without community support. New laws made this coordination essential to DoD.

Army and City officials met frequently throughout the closure process to ensure that communication of separate but parallel interests in the property was maintained. After closure of the Depot became a reality, a City Reuse Commission was formed to establish a direction and reuse plan. The Depot Commander and BTC, a local Office of Economic Adjustment (OEA) representative, and an ACOE representative all served as ex-officio members of this commission. While the Reuse Plan was primarily driven by local community interests, these ex-officio members helped to convey up-to-date information, maintain coordination between closure actions and reuse interests, and provide a sanity check on plans which the City was formulating.

As the Army's workload and equipment were being transferred, the City was kept informed of the movement so that issues could be raised if any of the equipment was viewed as essential to reuse. Through this continuous coordination, all equipment was transferred, disposed of or kept for the City with no unresolved conflicts.

The ACOE kept the Reuse Commission informed of screening results and requests for portions of the Depot. This information flow became essential to reuse planning as requests for major portions of the property by public agencies began to conflict with the City's plans to generate new jobs and tax base to replace jobs lost by closure. When a major reuse opportunity with Packard Bell began to surface, close coordination between the City and Army resulted in further acceleration of an already fast-track cleanup and transfer process to accommodate Packard Bell's interests and schedule.

The story of local coordination in Sacramento is discussed in more detail in Section 1.6.9 and Chapter 2 of this document.

1.6.2.4

Coordination with the ACOE

At Army installations, the ACOE is the real estate agent for the closure, and may also be the contracting agent for the environmental documentation and cleanups necessary for closure. The ACOE handled both roles at Sacramento and was also involved in other areas to assist in closure. With the Corps district located in Sacramento, SADA had the luxury of one-stop shopping for its closure requirements. This was essential in speeding up the closure process and meeting accelerated reuse timelines.

As real estate agent, the ACOE served as a clearinghouse for all property screening actions for DoD, federal, state and local, and McKinney requestors of Depot property. In consultation with Depot officials, the ACOE made recommendations on siting and approval of these requests, and communicated this information to the Reuse Commission. When the City decided to request an economic development conveyance (EDC) of most of the Depot, the ACOE worked closely with the Depot BTC in advising the City, reviewing their EDC package, and in ultimately negotiating the terms of the EDC for the Army. The ACOE then prepared the deed and MOA documents that were approved by the Department of the Army.

ACOE real estate personnel also worked closely with the Depot in establishing a process for interim leasing of Depot buildings as they became available. Under this process, three revenue-producing interim leases were implemented and a fourth was in process when the Packard Bell interest became a reality. The ACOE and Depot then established an interim lease with the City for portions of the property to allow Packard Bell to begin interim operations and start building renovations prior to actual transfer of the property.

In parallel with real estate actions, the ACOE also served as contract manager for both NEPA and environmental cleanup actions at the Depot. The NEPA documentation was completed by working closely with the BCT and Depot environmental staff in coordination with reuse planning being formulated by the City. The cleanup program was maintained on a fast track to support potential leases or property transfers. **Since both real estate and environmental documentation efforts were being handled by the ACOE, Sacramento District, close coordination between these two efforts allowed quick adjustments to scheduled completions for specific parcels to accommodate a reuse opportunity.**

Chapter 2 describes more fully the roles played by the ACOE in negotiating for and transferring real estate and developing interim leases. Subsequent chapters discuss the roles played in supporting environmental cleanup of the site.

1.6.2.5

Coordination with Regulators

The key factor in the successful transfer and reuse of the Depot was the cooperative relationship that developed between all of the parties involved, especially the regulatory community. **This team effort can be credited as the single most-important element of successful fast-track disposal.** When a potential reuser (Packard Bell) came into the picture and the work pace of closing the Depot had to be increased beyond its already frantic pace, everyone involved was willing to put forth extra effort to have the Depot ready to transfer in time to meet Packard Bell's schedule. Work involving the Depot became everyone's top priority. An example of this level of commitment is demonstrated by the willingness of the agencies to review and comment on EBSs in only a few days. Fortunately, development of this cooperative relationship started long before the Depot was placed on the closure list.

Three key agencies were involved with the disposal and reuse of the Depot. They were: USEPA, Cal/EPA, and the Central Valley Regional Water Quality Control Board (RWQCB). In 1992, Governor Pete Wilson, in an effort to improve the government regulatory environment, changed the California Department of Health Services into Cal/EPA. As part of that process, the RWQCB was placed under the direction of Cal/EPA's Department of Toxic Substances Control (DTSC). This move simplified matters by making Cal/EPA the single voice for the state on environmental issues. In an effort to provide responsive service, Cal/EPA also established the Base Closure and Conversion group within DTSC. This group, focused solely on base conversion, coordinated work within DTSC. Coordination meetings at the Depot often involved three players from the state: Barbara Marcotte (later replaced by Chris Parent) representing DTSC on the IRP issues; Diana Peebler representing DTSC's Base Closure Conversion group on closure issues; and

Robert Reeves representing the RWQCB on groundwater issues. In addition, meetings were attended by Marlon Mezquita representing USEPA on both closure and IRP issues (See Figure 1-1 for more information on the role of these and other key individuals).

The Depot Environmental Management Division recognized early that it was in the Army's best interest to establish a good working relationship with the regulatory bodies. This was done during the Technical Review Committee (TRC) meetings that were held monthly as part of the IRP. The Depot staff always tried to satisfy agency concerns, as long as the cost was reasonable. This cooperative relationship carried over into the disposal actions that occurred.

On September 9, 1993, the DoD issued guidance entitled, "Fast Track Cleanup at Closing Installations," to implement President Clinton's five-part program to speed up economic recovery at closing military bases. As a result of that guidance, the monthly TRC meetings were expanded into the Restoration Advisory Board (RAB). Table 1-1 provides a listing of the RAB and agency members involved in the disposal and reuse process. Even with the establishment of the RAB, the TRC continued to meet monthly to discuss technical issues and also meet monthly with the RAB to receive guidance from the RAB on programs and alternatives.

Efforts were made throughout the entire closure process to ensure that all parties involved were aware of what was happening, the status of various projects and the ever-changing schedule. The agencies were involved in reviewing and commenting on the EIS, the EBSs for the various study areas, Finding of Suitability to Lease (FOSLs); the FOSTs; and other key documents. They often reviewed early drafts of these documents and provided direction in developing both the format and content. **Agency concerns were always addressed.** No document was ever finalized with outstanding agency concerns. **Because of their involvement every step of the way, the agencies were informed (making reviews easier and quicker), they were helpful (having many good suggestions as to format and content), and they were committed to successful reuse.**

1.6.2.6

SADA Transition Plan

Fiscal Year 1994 was a critical year for the Depot because it was the year the workload competition was completed and the first RIF took place. In 1993, a SADA 1994 Transition Plan was developed by the Depot to address all the issues surrounding the projected events of 1994 and to discuss how the Depot would continue with the closure mission after all workload was transitioned. This planning process consumed many person-years of effort at the Depot, since events were changing rapidly and because higher headquarters wanted extensive plans for events over which the Depot had little or no control. In late 1993, it was clear that many original assumptions of early transition plans were no longer valid due to the accelerated pace of closure, especially the following assumptions: work loading until June 1994; conducting a single RIF in June 1994; downsizing to a transition workforce by September 1994; and downsizing to a caretaker workforce by September 1995. Some changes affecting these assumptions were that competition winners were not hiring Depot employees, most maintenance workload transitions were taking less time than anticipated, and strength targets allowed by higher headquarters were

lower than planned. Changes were implemented in September 1993 to adjust the transition plan to these new conditions. Changes implemented were:

- RIF authority was requested for a March 30, 1994, RIF to move excess maintenance personnel off the payroll. This would reduce the authorized strength from 1,000 to 123 personnel. The RIF was approved but delayed until early May 1994.
- SADA requested new incentives for separations. These were approved and the approval and expansion of Voluntary Separation Incentive Pay (VSIP) and Voluntary Early Retirement programs helped move large numbers of personnel off the payroll before the RIF. Only about 120 personnel actually lost their jobs in May 1994. Subsequent RIFs affected only about 40 more personnel. Some of these employees were later offered employment through the Priority Placement Program (PPP).
- Prior to the RIF, SADA used excess employees to expedite demobilization of equipment and unused facilities.
- Authorization documents for transition and caretaker workforces were developed and were much smaller than anticipated just months prior. Even these were constrained by events. Ultimately a force of 41 was approved after September 30, 1994; 28 after February 28, 1995; and 5 after May 30, 1995.

A final transition plan was developed in January 1995 to complete the transfer of all remaining Depot actions to Tooele. At this time the Depot was authorized 41 personnel and had about 36 personnel remaining. A RIF was scheduled for late February and a final RIF on April 30, 1995. For the final transfer, all remaining tasks being accomplished were documented. Each was either targeted for completion before closure or identified for transfer and a transfer date established. Tooele managers receiving mission transfers traveled to Sacramento in late February and early March 1995 for final briefings. Transfers took place on specified dates when the remaining documents and records were mailed and received at Tooele. Sacramento employees working in the areas of resource management, personnel, and timekeeping traveled to Tooele in early March to work with Tooele employees who were taking over these missions. Due to this extensive coordination, there are no known areas where transition was neglected at closure.

1.6.2.7

Workload Competition

The competition of the maintenance workload at the Depot was a direct result of the BRAC 91 recommendations. The Commission recommended that SADA's workload be realigned through competition between five selected Army depots and the Sacramento ALC at McClellan AFB. This recommendation was a compromise position between the Army's desire to directly realign the workload to Army depots and the Sacramento Plan presented by the Sacramento community that recommended splitting all electronic workload geographically between Tobyhanna Army Depot in Pennsylvania and McClellan AFB.

A Joint Service Working Group (JSWG) was brought together by the Office of the Secretary of Defense to execute the BRAC decision on SADA. Headquarters Communications/Electronics

Command (CECOM) was designated as the DoD Executive Agent to ensure mission execution and successful accomplishment. At this early stage in the closure process there were many vested interests. DoD wanted a fair competition that gained the lowest possible price for repair work. DESCOM believed that its depots could provide the lowest prices and since Sacramento was an Army depot, believed that the work belonged to the Army. The Depot wanted to transition the workload in a manner that best fitted its employees. Since none of the transfers would be "transfers of function," the personnel at the Depot doing the current work had no right to transfer with the work. The Depot also wanted to continue to do billable work as long as possible since this helped the budget. The JSWG had to adjudicate many differences of opinion during the competition to keep the process moving and viable. Mr. Ken East, the working chair for the JSWG, did an exceptional job in keeping the process honest and on track.

The SADA maintenance workload was divided into nine logical equipment groupings that were competed between McClellan AFB and one of the five Army depots in the following order: Airborne Electronics, Fighting Vehicle Electronics, Electro-Optics/Night Vision Equipment, Radar, Radio, Gyro Indicators, Intelligence/Electronic Warfare, TMDE/Radiac, and Wire/Data Communications Switches. Two of the groupings (Fighting Vehicle Electronics, and Electro-Optics/Night Vision Equipment) were evaluated by the Source Selection Authority at HQ Missile Command and the remaining seven at CECOM. Of the groups evaluated at CECOM three were evaluated based on "Best Value" (Airborne Electronics, Radar, Intelligence/Electronic Warfare) and four based on "Acceptable, Lowest Price" (Radio, Gyro Indicators, TMDE/Radiac, Wire/Data Communications Switches).

The selection process began with the issuance of Request for Proposals (RFPs). The issuance of RFPs was staggered over a 9-month period beginning April 1, 1992, and ending January 1, 1993. Staggering was necessary to allow the Depot to transition workload in an orderly manner and to allow McClellan AFB to compete for each of the workload packages. Award dates were staggered over a period from January 15, 1993 to December 17, 1993.

The competition process was very stressful for Depot employees. The only sources of documentation for the maintenance processes being competed were Depot employees and their records. The Depot workload competition office gathered 31 file cabinets of information on the workload, shipped over 18,000 pounds of documents to competitors and hosted over 70 conferences. Although this occurred while the Depot workforce was being decimated by retirements and PPP placements, few serious problems were encountered. Most employees acted in a professional manner and supported accurate and complete transition of the work to the winning Depot. **Depot officials supporting this effort established a manageable process for transition, clearly stated that closure was the Depot mission, and demonstrated on a daily basis that all possible efforts were being made to place employees into new jobs.**

To support the vast amount of work required for the workload competition, a very structured process was developed by Mr. Ken East and Mr. Guy Brown, the Chief of the Depot Integrated Logistics Support Office. At first, three stages for each competition were proposed: Package Preparation, Solicitation and Evaluation. Later a fourth stage, Transition, was added, which was the process to get the production line moved to the new Depot, equipment set up and calibrated,

and production of new workload started. The process was initially proposed to begin in October 1991 and end in September 1993; however, all transitions were completed in June 1994.

Lessons learned from the process can be obtained from CECOM competition offices. CECOM estimated that \$16 million was spent to run the competition and that the initial savings (original SADA cost vs. new bid award) would be \$388 million—funds that would not be spent on overhaul of equipment. This estimate did not consider the actual performance of bidders in competing the former Depot workload, nor did it consider the eventual cost of “buying in” by the competitors.

1.6.3

Personnel Issues

1.6.3.1

Strategy for Closure

During the spring of 1991, with each event in the BRAC process it became evident that the Depot was being seriously considered for closure by the Department of the Army. The Depot leaders began developing a strategy for closure that would allow the Depot to close in an orderly manner and yet consider employees' needs. The stated goals of this strategy follow.

Clearly state to employees that the primary Depot mission is closure. When Colonel Grundy arrived as Commander of the Depot in August of 1991, he stated that his mission was to close the Depot if the President approved the recommendations of the Closure Commission. Major General Benchoff said the same when he visited the Depot later in the year. At every opportunity Colonel Grundy reiterated this reality for employees so that they would do real planning for their future and not harbor false hopes about a miracle.

Maintain, through every means possible, open communications with employees. Some of the strategies used by Depot leadership follow:

- Civilian personnel bulletins were published frequently, providing updated information on closure issues such as timing, priority placement and RIFs.
- Town hall meetings were used for important face-to-face announcements with the workforce. These allowed employees to interact directly with the Commander, to ask questions and to gauge for themselves the sincerity of the command group.
- Live Local Area Network (LAN) broadcasts eventually replaced most town hall meetings. These were effective because they could be held frequently and were transmitted directly into the workplace over the Depot LAN causing little disruption in the workday. The panel at broadcasts included the Commander, Deputy, Director of Personnel and Community Services, Union President and others as needed. Employees could call in live by phone with questions and get immediate answers. Questions were answered live

whenever possible. Deferred responses were published in writing to the entire workforce as soon as possible.

- An employee reference journal was developed that included information on the RIF process, the PPP, and a list of commonly asked questions and answers. These were updated regularly.
- The Commander's Hot Line was answered daily. Callers who identified themselves were called back by the Commander within 24 hours. Anonymous calls were answered in the Depot newspaper if the caller raised a legitimate issue.
- The Depot published a weekly newspaper that had regular articles on various aspects of the closure. Exit interviews were included for as many departing employees as possible.

Open and operate a state of the art transition center for employees. A center called the "Future Opportunities, Careers and Ultimate Success (FOCUS) Center" was opened that provided employees with a one-stop-shop job research center. This center is outlined more fully in Section 1.6.3.4.

Pursue every means possible to place employees into new work or an acceptable alternative. A wide selection of strategies were used to place employees. Multiple programs were used because employees' needs differed. Some of the most successful follow:

- The PPP was the most successful program. The Depot pursued and was granted permission for early registration of employees and ultimately 1,170 of the initial 2,600 employees in the workforce in June 1991 were placed through this program. Key to this success was a very aggressive effort to market Depot employees with potential employing activities and to conduct individual meetings with employees to discuss their options. Use of contracted personnel (retired government employees familiar with PPP) provided a stable workforce to maintain emphasis on this highly visible program.
- Voluntary Early Retirement Authority. The Depot asked for and received approval for voluntary early retirement for eligible employees. This program allowed employees who were near the normal retirement age and time in service to retire early with a small penalty based on the number of years short of normal retirement. Many employees who did not want to move took advantage of this program, allowing younger employees to stay in the workforce until placed by PPP.
- Voluntary Separation Incentive Pay. This program offered employees an incentive of up to \$25,000 to resign or retire within a window of time specified by higher headquarters. There was also a program to allow employees at other activities to retire using Depot VSIP funds and to place SADA employees into the vacated positions.
- Defense Conversion Adjustment Program. The Depot received an initial grant of more than \$1.8 million for use in employee retraining. These funds were available through the

Sacramento Employment and Training Agency (SETA) for a range of services. The Depot cooperated with SETA to offer screening and counseling on Depot for eligible employees. More than 300 employees participated in the program.

Retain employees needed for closure by using incentives. Although Depot leaders pledged that no one would be considered indispensable, it was necessary to keep critical skills in the workforce until missions were completed. In late 1991, the Depot forwarded a list of proposed incentives to DESCOM that offered incentives for key employees to stay and help with closure. While these were not approved, other programs did help with retention of critical skills. Voluntary early retirement and relocation of older employees helped keep younger employees with critical skills at the Depot longer. Extending VSIP windows helped keep key employees with critical skills who were eligible to retire. The ability of the Depot to meet end-of-year strength targets from 1991 to 1993 without a RIF, allowed Depot managers a more orderly drawdown of employees than would have been possible under the RIF rules.

Make "Closing with Dignity" the goal of the Depot. This goal was implemented largely through taking care of the employees through job placement and accomplishing each closure mission well. As successes mounted, employee morale regarding the Depot accomplishments increased. In the end, this morale and pride could be seen at the closure ceremony when hundreds of former Depot employees applauded the Depot commander after his address was completed.

1.6.3.2

Development of Closure TDAs

The authorization document for Sacramento Army Depot, like many non-tactical Army organizations, was the Table of Distribution and Allowances (TDAs). TDAs are developed through a structured personnel system with a lengthy process for gaining approvals through the chain of command and two yearly windows for changes to the formal document files in Washington. Other constraints on personnel levels were grade and staffing authorizations in the civilian personnel system and financial constraints in funding for positions. In particular, during the last two years of Depot closure, the formal TDA documentation process became irrelevant at the local level. Changes occurred too fast for the system to adjust so personnel end strengths were calculated at DESCOM and issued directly to the Depot Commander. The Depot was careful to ensure that all actual personnel changes conformed to Civilian Personnel Office (CPO) rules and that grade and classification rules were followed.

As the Depot closed, an enormous amount of time was expended in developing informal TDA documents for approval at Tooele Army Depot and DESCOM. These were locally developed spreadsheet formats that showed organizational structure, personnel, grade and classification for positions the Depot leadership thought would be needed during the upcoming stages of closure based on then current guidance. All TDA development was zero-based, meaning that for each iteration managers built the TDA based on demonstrated need, not current staffing. These locally developed TDAs were supported by the proper CPO classification documents for all positions and personnel qualifications for positions were closely monitored.

Great amounts of time were taken in developing TDAs and justifying the organizational structure (especially beginning with the proposed structure after the first Depot RIF in May 1994). This same detailed oversight continued through closure. Directed targets for the Depot were 1,000 for September 30, 1993; 123 for May 2, 1994; 44 for September 30, 1994; and 10 for April 30, 1995. The Depot met these numbers and attrition quickly took the numbers below the target in each case.

1.6.3.3

The RIF Process

The RIF was the most feared aspect of closure for both management and employees. The stated goal of Depot leadership was to avoid RIFs at all cost. At the same time, the Depot leaders had to plan for RIFs that were certain to occur at some point during closure. RIF planning was complicated because the approval process for a RIF was congressionally mandated, any RIF over 50 personnel required congressional notification, and the necessary supporting documentation was extensive. RIF/realignment requests were prepared and forwarded up the chain-of-command for fourth-quarter fiscal year 1992, September 1993, March 1994 (delayed until May 1994 by Headquarters, Department of the Army [HQDA]), September 1994, February 1995, and April 1995. Because of the successful Depot out-placement program, the first RIF was not effected until May 1994. For all these actions only 200 personnel were involuntarily separated through a RIF out of an initial Depot workforce of 2,600 in June 1991.

Planning for RIFs involved enormous amounts of paperwork for the CPO, since each involved ranking and evaluating all Depot employees and preparation of extensive outprocessing packets for all those projected to be affected by the RIF. One of the most difficult tasks at the Depot was to gather the necessary CPO team to run the various aspects of a RIF because attrition drastically reduced the CPO staff. Personnel were requested from higher commands, local DoD activities and when no other avenue was available, contract support was used.

A key initial step taken at the Depot was a 100 percent scrub of all Official Personnel Files. The information generated by this scrub was reformatted into a readable format and all employees reviewed their file information and verified its accuracy. This verification process and subsequent one-on-one meetings with employees were essential steps in maintaining employees' sense of fairness in the system.

The program used to actually process RIF information at the Depot was RIF Wizard, a PC-based program developed at Rock Island Arsenal. It is a very user-friendly program, and when computations are completed, all letters are automatically printed, all required audit trails are documented, and statistical reports are available in many formats. The retention register showing how the process worked was available for employee review. The openness of this process and the fact that the computations were done in an automated fashion helped document the fairness of the system.

1.6.3.4

FOCUS (Future Opportunities, Careers, and Ultimate Success)

The Depot opened the FOCUS center in late 1991 as part of the Depot strategy to provide the best possible outplacement service to employees and to help meet the goal of no involuntary separations. It was equipped with the latest computer software listing vacancies in federal, state, city, and county agencies and in private industry. Computers with the latest word processing software, laser printers, copiers, fax machines and phone lines were available for resume preparation. An extensive library of job-related publications was set aside in a reading area along with current editions of area newspapers and job-related periodicals. Staff consisted of both personnel and non-personnel specialists who offered an extensive array of training classes from how to use the computers to job interviewing skills. After the retraining grant was approved through the Department of Labor Job Training Partnership Act, additional classes were added and employees were able to do screening and paperwork for funded job retraining offered by a wide array of local educational organizations.

As an incentive to use the FOCUS center, the Depot Commander allowed up to 50 hours of government time, without charge for leave, for job interviews and time in the outplacement center. The center was available not only to civilian employees, but to military assigned to the Depot and the spouses and families of both.

The FOCUS center received extensive publicity and many Depot visitors were impressed with the facility. One question commonly asked by visitors regarded the feasibility of setting up FOCUS in a closure setting considering the budget constraints at a closing installation. The response was that the cost of the FOCUS center was amortized very quickly by placing employees locally into new jobs who would otherwise have moved or have been separated involuntarily. Based on data collected in April 1993, the average cost of 255 Permanent Change of Station moves was \$32,760. Releasing an employee involuntarily costs both severance pay and unemployment, and if the employee was later picked up through Priority Placement, a Permanent Change of Station move could also have been involved. Placement of only a few employees locally quickly recouped the estimated \$100,000 cost of setting up FOCUS. In fact, at least 94 employees obtained new jobs directly from openings they learned about through FOCUS and many others stated during their exit interviews that the FOCUS center was a great help in preparing necessary paperwork and in developing needed job skills. Put simply, FOCUS saved millions in severance pay and Permanent Change of Station costs by placing employees locally. As a morale booster, FOCUS was invaluable.

1.6.3.5

Interactions with Federal, State, and Local Personnel Agencies

There was constant interaction with federal, state and local personnel agencies throughout the closure process. Although the Depot was a closure activity, the continuing success of outplacement efforts resulted in many visitors from agencies to see what was working. The Depot also received extensive moral support and assistance from the Priority Placement Regional Office and from the Office of Personnel Management in Washington. Because Sacramento was a

BRAC 1991 installation, many of the laws and initiatives developed to assist employees and activities during closure were developed during the Sacramento closure time frame. New laws and rules and lack of precedent in interpreting them caused significant tumult in an already difficult personnel process at Sacramento. As the Depot neared closure, extensive coordination with local personnel agencies was required to ensure separated Depot employees would receive priority for Packard Bell positions.

1.6.3.6

Personnel Drawdown—The Process and Results

The personnel drawdown at Sacramento Army Depot was affected by many forces. The intent of the leadership at the Depot was that the drawdown be fast enough to find work or an acceptable alternative for all employees, but slow enough so that the necessary closure tasks at the Depot could be accomplished. Ultimately both of these goals were met but there were many peaks and valleys in the process. It was important to management that attrition keep the Depot strength below end strength caps as long as possible, because any involuntary separation process would use federal RIF rules which would seriously degrade the Depot organization. Without a RIF, the Depot management had a much greater ability to keep the best trained employees in key positions. The Depot was able to meet end strength goals through attrition until May 1994. Some of the key factors affecting this success are outlined below:

- Early attrition of personnel with marketable skills. Personnel with skills such as procurement, legal, computer programming and accounting left very early, especially young personnel who were not vested in the federal retirement system. Those who were vested sought positions in other federal agencies.
- Special programs. Special programs such as those outlined in Section 1.6.3, helped move personnel off Depot employment rolls.
- Cut-off dates for programs. There were numerous cut-off dates established by higher headquarters for separation incentive programs that provided decision points for employees. For example, at the end of each VSIP window, employees had to decide whether to sign up for the VSIP program or to take the chance that another window would open at a later date. Management informed employees, using every communications means possible, when cutoff dates were approaching and what their options were.
- Rapid placement of workers who expanded their Priority Placement zone. Employees who expanded their Priority Placement zone were usually placed quickly, often within two weeks.
- Retention of retirees. The willingness of some key personnel to stay on active duty as long as possible and then retire.
- On-the-job training. Some younger workers wanted to stay in a job series long enough to document their skills in the personnel system. Depot managers helped create work situations that were mutually beneficial to the employee and the Depot.

- Playing the odds. Certain workers waited very late in the closure process to expand their Priority Placement zone, hoping to be picked up in the local area. Many of these employees were available to fill important positions.
- Requests for extensions. To keep some key skill positions filled, Depot management asked federal agencies who hired Depot employees through the Priority Placement Program or the VSIP Exchange Program to delay the departure date of the employee until particular missions were completed.

1.6.3.7

Management and Employee Relations (MER), EEO, Grievance Issues

MER was a vital office during the Depot closure. Not only did the MER personnel handle the normal workload of administering employee and management performance issues but fielded many new issues related to closure. In a closure, every employee will either move to a new job, resign or retire, or be released involuntarily. Regardless of the scope of management efforts to lay out options and to help employees make decisions, a certain percentage will still believe the closure is a conspiracy against them and that they are owed special consideration. These complaints may show up as grievances or Equal Employment Opportunity (EEO) complaints. Management's defense against these predictable allegations includes clear documentation showing competence, equity in dealing with employees, impartial handling of each step of the grievance process and a good MER staff. Documentation is critical since the grievance process can be prolonged while the records base of the Depot is rapidly being closed out. Records applicable to particular cases must be protected intact because an employee with a baseless case could nevertheless win a grievance if the government cannot prove that the allegations are false. It is also important that managers and personnel involved in a case fully document their information and statements before departing the Depot. Competent and quick consideration of employee issues is important to employee and management morale and will reduce grievances from other employees. A maximum effort to address problems can preclude employees using other means such as physical violence to express their frustration.

The personnel staff at the Depot was excellent and quality managers remained throughout the closure. They handled a steady stream of employees with questions and complaints and the few who filed formal grievances. It is interesting to note that there were no filings related to RIF placement or the downsizing process itself. This was due in part to the excellent system of documentation of the process, employee briefings both group and individual, and the belief by most employees that their local management had taken every avenue possible to support Depot personnel issues. In the EEO arena there were several complaints but all were found to be without merit after review by higher headquarters.

The last issue was one that was a concern to all managers, especially the employees working in personnel. These employees were physically accessible by Depot employees throughout the closure and in light of many instances of disturbances, injuries and even death caused by disgruntled workers, security for managers and personnel workers was a concern. Fortunately, the personnel section was only a few hundred feet from the Depot security force building. Several silent panic buttons were installed in key areas of personnel and in the Commander's office.

These were only used a few times to solicit help in calming verbally irate employees. Sacramento never had any physical incidents against personnel or management and there were no threats communicated in a manner for concern. Other installations may not be as fortunate and should constantly monitor the mood of the workforce and the mood of potential troublemakers.

1.6.3.8

Military Personnel

When Depot closure was announced, there were 20 military personnel at the Depot and 300 tenant military. Only the military commander had quarters on post, all others lived in the community. There were adequate military pay and personnel offices and a morale support organization. Although small in number, military personnel played a key role at the Depot. Under normal operating conditions, the civilians at a facility provide continuity and the military are reassigned frequently. In a closure, the opposite is true: civilian continuity is lost with rapid turnover of key employees, while the military can be retained until major closure milestones are met. This proved true at SADA as numerous key civilians were lost fairly early in the closure process, with some of these vacancies filled by military. The commander and numerous directors were military and key supply and maintenance personnel were drawn from the military ranks. Military personnel from the Depot also participated in many exercises external to the Depot such as Desert Storm, hurricane relief to South Florida, and Operation Restore Hope in Haiti.

Gradually as closure neared, support services eroded as personnel either retired or were transitioned out. Support was initially transferred to Sierra Army Depot for pay and personnel actions. At the end, personnel outprocessed at Ft. Lewis in Washington State, the closest servicing organization. The last military person assigned to the Depot was LTC Larry Greene, who retired in June of 1995.

1.6.3.9

Medical Support

Medical support for personnel at the Depot was provided at the medical clinic on post. Personnel issues requiring medical support involved physical exams for all employees transferring to new government employment, evaluations directed by MER to support claims for sick leave and other evaluations directed by management.

Heart attacks, high blood pressure and many other physical and mental ailments are probable in the workforce under the stressful conditions surrounding a closure. Procedures to handle those conditions that occurred during the work day were available through the medical clinic and local hospitals. The Depot also developed a program to lower the stress for the workforce. A licensed counselor was put on contract to present a series of stress-reduction classes to all employees. This person was also on call to supervisors and employees to address stress on a personal basis and was available in the work areas during specified times to answer questions. Many employees took advantage of this opportunity, leading to management's belief that the program had a positive affect in reducing the general stress level and in helping key individuals deal with the closure in a clinical environment rather than in a more destructive manner.

Counselors, religious personnel, expanded security and hot lines were in place to address employee and management concerns during high stress times such as when the first RIF announcement was made.

1.6.3.10

Morale, Welfare, and Recreation

Disposal and closure of Morale, Welfare and Recreation (MWR) activities is a separate process from other aspects of facility closure. MWR offices are located at most military activities and operate without funding from tax-based, appropriated accounts. They are funded through the Non-Appropriated Fund (NAF) account, which includes money provided from personnel exchange sales world-wide and from user fees for services. MWR accounts are regularly audited and all equipment is inventoried separately from equipment purchased through appropriated channels.

The Depot had an extensive MWR structure that was well used by all employees. Activities included an equipment rental shop, an auto repair shop, a craft shop, the post restaurant, the clubs and pools. All these facilities were downsized gradually over the closure and closed themselves when no longer viable. There were several public sales of NAF equipment that could not be cross-leveled to other DESCOM NAF accounts. Funds generated by these sales went back into the NAF account at higher headquarters for redistribution.

Depot dining facilities fell under the NAF account at the Depot. The Army Materiel Command MWR office attempted to close all facilities in the fall of 1993 since profits had fallen off from previous levels. This closure would have had a serious impact on employee morale and productivity since there was no other dining facility on post and employees would have to travel off post for lunch. LTC Blose personally addressed this issue with Major General Benchoff who decided to allow the dining facility to remain open until the summer of 1994. Subsequent funding reviews showed that through careful allocation of available work and close monitoring of menus and specials, the facility was profitable throughout that time, justifying the continued operation monetarily as well as for supporting morale.

1.6.3.11

Depot Clubs

There were two clubs on the Depot operated by the Directorate for Personnel, Community Activities and Security. The Oasis Club was in building 682 on South Post and was largely used by military personnel and reserves attending classes at the High Tech Training Center. It was transitioned as part of the Reserve Enclave in September 1993. The main Depot Club occupied Building 140 on North Post and was a large facility with a dining room, meeting rooms, a bar area and a pool. This facility was kept in operation until the summer of 1994 by leasing the facility as a training site for Procter and Gamble. Closure of both clubs was a morale issue with the remaining military and civilian workforce at the Depot.

1.6.4

Computer Operations

The Depot had a major computer center with a separate environmentally-controlled building and a classified message center for the Depot and tenants. Initially most of the computer personnel at the Depot were employees of the tenant activity U.S. Army Information Systems Command (USAISC). However in 1992, most personnel slots related to the development and maintenance of standard computer systems like the Standard Depot System (SDS) were moved to higher headquarters and local operational personnel were assigned to the Depot within the Directorate for Information Management (DOIM). The DOIM operation was networked with virtually every office on Depot. Among the activities operating under DOIM were: ground communications, telecommunications, print plant, audio-visual office, photography and photo lab, records management, all automated systems both networked and stand alone, and day-to-day management of all contracts associated with these functions. The transition and closure of these many areas and integration of all actions with the closure of the rest of the Depot was exceptionally difficult to accomplish.

1.6.4.1

Initial Facilities

The main DOIM administrative area was in Building 150. Additional space was located in the computer room, communications room, and offices in Building 245 (3,000 sq. ft.), and in many smaller areas throughout the Depot. The physical plant and the multitude of hardware and software items were a complex mix of old and new technologies held together by many locally designed and procured bridges and linkages. Selected major equipment included:

- Encore Super Mini (1)
- Sperry 5000/80 (6)
- Zenith 286 PC (1220)
- Underground cable (16 miles)
- Northern Telecom Electronic Telephone Switch (3200 lines)

A major issue with equipment was accountability. There was so much automated equipment at the Depot, from so many sources that no one seemed to know the location of everything. A significant amount of equipment was not on property records since it had been purchased with other organizations funds or was loaned to the Depot without proper documentation. An initial 100 percent inventory directed by the Commander resulted in both a large shortfall in equipment and many items being added to the database. It took several years to find all the items that were on this original discrepancy listing because many of the shortage items were part of systems installed throughout the Depot and were located during closure of buildings and offices.

DOIM also had several significant local repair, refurbish rooms where equipment could be recycled locally. These operations were very cost beneficial, especially for items such as hand-held radios and cable repair.

1.6.4.2

Closure Plan

The closure plan for the DOIM operation was very difficult to construct because of the complexity of the missions and the interconnectivity of the internal and external data linkages. The initial plan was developed under the direction of the ESC as one of the master closure plans for each of the directorates and major offices. Development of the plan and accuracy of the information was severely impacted by the loss of many key management and technical personnel. In reality, there were only a few remaining technical personnel who really understood the entire system and could evaluate impacts on one part of the system from changes in others. The few technical personnel were extremely busy operating and maintaining the system on a daily basis. These personnel were essential in designing the closure plan and making it work. The Depot was also fortunate to have a contract in place with Computer Sciences Corporation through the General Services Administration that allowed operations to continue in key areas when there were no longer personnel to maintain service. This assistance was especially vital at later stages of the closure.

The general elements of the closure plan follow:

- Each major operation within DOIM was outlined determining all interfaces with that operation, and how and when to transition personnel and equipment for closure.
- A determination was made on how to eliminate all external users of Depot computer facilities by transferring customers to alternate support sites.
- All DOIM systems, equipment and personnel associated with each workload group were identified and the DOIM interface was closed in conjunction with the workload transfer.
- A specific plan was developed for all remaining equipment to identify Depot users, and to establish a time frame for closing the operation.
- A complete equipment list was sent to higher headquarters for disposition instructions. Equipment was shipped according to the list as soon as it was turned in from the Depot user.
- A plan was developed to transition the Depot from internal to external telephone switch support with Pacific Bell and to ship the Depot electronic switch to another DoD site.
- A plan was developed to transition to a limited automated support system during the transition and caretaker stages of Depot closure. Disposition instructions for all remaining equipment at each stage were documented, including shipping instructions for loaned equipment.

1.6.4.3

Disposition of Equipment

All DOIM equipment was identified to higher headquarters for cross-leveling within the command. Equipment not identified to a specific user was marked for turn-in to the Defense

Reutilization and Marketing service at the Depot. All equipment on loan or belonging to another command was shipped back to the owner as soon as available.

1.6.5

Personal Property Disposal

Disposal of personal property was an enormous issue for the Depot. There was at least \$252.6 million in personal property to be disposed. A significant number of items that had been purchased for special projects had to be accounted for and recorded. The government system in place for disposal of personal property in 1992 was cumbersome and time-consuming. Minimal guidance was available on how to process property related to the competition of the Depot workload or property that could be associated with reuse planning needs. Starting with this limited and unwieldy system, the Depot supply management and employees fashioned a workable process and by the end of 1994, auditors had officially closed both the property book and stock record account with findings of no discrepancies. This evolution is one of the hidden success stories at the Depot and was a testament to a very professional and dedicated team that refused to surrender to adversity.

1.6.5.1

The Plan

The plan for disposing of all personal property at the Depot was developed by Major Pieter Droog and his staff in 1992. The main points of the plan follow in the general order of execution:

- Update property books and hand receipts. It was essential that all hand receipts be updated and a 100 percent inventory of all areas be completed to ensure that equipment and repair parts were disposed of properly.
- Identify equipment required to perform competed missions. This process required maintenance managers across the Depot to validate the items of equipment required to perform each of the competed workload packages.
- Validate lists of required support equipment with competing depots. DESCOM sponsored working group meetings at the Depot that were attended by all competitors to identify and list the associated equipment for each competition package. These lists were updated continually and after the competitions, winning depots again reviewed the lists to ensure a complete maintenance package was provided to the competition winners.
- Establish a database for property. This effort was a key part of the success of the property transfer. Eventually all items on record were on this database and the disposition of each was noted on the item record. All items on the Depot were tagged, in place where possible, to ensure that the item was routed to the proper staging area and ultimately to the correct customer. This database automatically provided disposition documents when items were available for disposal.

- The remaining items were identified to DESCOM and then to the AMC so that needed equipment could be cross leveled within the command. The lists were also provided to the City of Sacramento for review as possible items of interest to support reuse of the site.
- Items that were not competition related and were not needed for cross-leveling were identified to the proper agency for disposition instructions.
- All remaining items were relocated to the local DRMO. DRMO screened the property through federal, state and local authorized activities and then sold the remaining equipment to the public.

Some other key milestones of the property disposal process were:

- Establishing staging areas for categories of equipment. Separate staging was established by workload competition package, for DESCOM and other army claimants, and for reuse. This process allowed entire work areas to be turned in and cleanup of facilities to begin while disposition of equipment was decided and equipment was safeguarded.
- Establishing a central area for non-property book items. This area allowed an assembly line process to separate items into categories for disposition. There were many items that were too inexpensive for property book tracking (bookshelves, chairs, office supplies, etc.) but in quantity, these items were valuable for cross-leveling to other government activities or sale through DRMO.
- Establishing an on-site DRMO office. This office, which was set up in parts of Buildings 251 and 253, provided a local site for the storage of equipment while it was screened through the lengthy process to offer excess equipment to other government agencies. DRMO sales of excess equipment also took place on-site at the Depot.
- Establishing a set of Standard Operating Procedures (SOP) that guided the property transfer process. A key part of this SOP was the ranking of equipment requests. The initial SOP gave first priority to workload competition equipment, second priority to equipment requests within the command, third priority to equipment identified for reuse, and fourth priority to moving remaining equipment to DRMO for disposal through its processes. During the Depot closure, changes in the BRAC law directed that property to support reuse was the highest level claimant after competition. The SOP outlined who would resolve multiple claims for the same equipment, often higher command approval was required. In addition, there were some special claimants for selected equipment such as the claim on all historically significant items by the Center for Military History.
- All Self Service Supply Store items were offered and accepted by other military activities in the area. There was a great quantity of pens, paper, toner, etc., that was identified as areas were closed and cleaned. Rather than dispose of these items as trash, they were collected, consolidated, and redistributed for government use.

1.6.5.2

Personnel Structure for Supporting Disposal

One of the most difficult tasks facing a closing facility is retaining qualified personnel who understand how the facility operates. Nowhere is this more important than in the Logistics Division. Fortunately for the Depot, the key management personnel in Logistics remained till closure and then either retired or found other employment. The Depot was able to cross train many mid-level and worker personnel during closure to support the workload in the Logistics Division.

During closure the Logistics Division had three subdivisions, the Installation Supply Activity, the Property Book Office, and the Inventory Team. These areas were augmented by many subordinate property book officers throughout the Depot, with a closure Point of Contact in each major work area and with the assignment of teams from maintenance to cover specific Logistics tasks after the maintenance areas shut down. Johnson Controls World Services (the base operations support contractor) also provided continuity in some key areas such as the mail room, motor pool, and internal transport. Representatives from each of these areas attended a bi-weekly Logistics Process Action Team meeting to identify and resolve issues.

The Logistics Chief, Major Pieter Droog, wrote a series of Standard Operating Procedures during the closure which outlined at each stage, what the procedures were to turn in equipment. The process was simplified as much as possible, eventually Logistics inventory teams were used to manage the final processing and movement of items out of work areas to the holding areas. The Depot Commander and Civilian Executive Assistant emphasized the importance of supply accountability with each manager and property book holder on every occasion possible.

1.6.5.3

Military History Requirements

Part of the closure process for any installation is a review of all property by the Chief of Military History (CMH). Generally, a team from the Museum Division would visit the activity and designate items to be sent to one of the military history repositories for safekeeping. The items identified as having historical significance would vary with the installation and are often unusual. Some items that were selected from the Depot were:

- Depot Commander's photographs to the U.S. Army Military History Institute
- Organizational awards and trophies to the Commander, Pueblo Army Depot
- Depot mural to the Curator, California Citizens Soldier Museum
- Depot newspapers to the U.S. Army Military History Institute

1.6.5.4

Tool Room

All installations with a maintenance workload have some type of tool accountability established, even if there is only a motor pool. The Depot had an enormous amount of tools of every type imaginable. The most expensive and those centrally located in Maintenance Building 320 were kept in the tool crib and signed out to workers when needed. At the time of closure the tool crib inventory had been automated, with a hard copy inventory over 900 pages long. Since tools are highly pilferable, a special effort was made during closure to account for tools and to spot check employees leaving the Depot. Despite these efforts, the final tool room inventory was \$26,000 short. The Internal Review and Control office from Tooele Army Depot was asked to investigate the shortage. The final report showed that there were many different ways tools were turned in during the closure, often not through the tool room. The findings show that the shortage in the tool room is more than made up by the many tools turned in through other avenues. There was no further investigation required.

1.6.5.5

Use of Personal Property to Support Reuse

As the City of Sacramento began its reuse planning, lists of personal property were provided for review, and tours were conducted of major buildings to identify those items of potential interest to support reuse. The City was informed that some items would have to remain with the workloads that were being competed, and other items would be claimed with a mission essential priority by other DoD activities.

The City of Sacramento provided lists of those items it desired to retain on-site to support potential reuse opportunities. City reuse was entered into the database as the destination for those items, and when turned in they were kept segregated in a separate portion of the staging warehouse. Where conflicts occurred between City reuse needs and DoD screening requests, the City was informed that a mission-essential need had been identified for the item and it would not be available for reuse. If the competing DoD screening request was not clearly identified as mission-essential, the requesting activity was given the opportunity to identify a mission-essential need; if that was not done, priority for the item was given to the City's request to support reuse.

As the competitions progressed, additional items of equipment were identified as needed for accomplishing the competition workload. In addition, new requests were received as a result of ongoing screening. If new designations conflicted with City of Sacramento requests, the Depot BTC sent a letter informing the City that the item was being redesignated to support mission workload. This gave the City an opportunity to rebut the redesignation if it so desired.

The City of Sacramento also solidified its thinking as reuse planning progressed. This resulted in additional requests from the City. Again, if there were no conflicts, the item was redesignated in the database, and the items were stored with City-designated items as they were turned in.

As the Depot moved further into the closure process, concerns began to form about how the rapidly dwindling staff could maintain accountability for the City of Sacramento items while closing out the Depot's property books. A two-stage solution was established to address this concern. First, in October 1994, the base operations support contract was modified to make the remaining items on the Depot's books government-furnished property to the contractor. This included items remaining to be shipped to other agencies and the City's items. Second, when the City signed the interim lease in December 1994 for portions of the Depot real estate, under terms of the lease it assumed responsibility for the property being held for reuse. Actual ownership of the personal property then transferred to the City as part of the real estate deed transfer in March 1995.

1.6.6

Facilities Engineering

1.6.6.1

General Facilities Issues

Facilities engineering issues became a major part of closure planning. Buildings and utilities systems had to be closed or phased down, but flexibility had to be maintained for remaining operations and various reuse possibilities. Since the Depot was actively pursuing leases, these possibilities were included in contingency plans. Roads and grounds could be phased out with fair predictability, but utility systems would be needed until the very end, and thus were a critical part of planning. The rapid changes in plans made more than short-term planning difficult at best. The flexibility provided by having a base operations support contractor, Johnson Controls World Services, proved to be a major factor in keeping the facilities issues on track as the loss of key personnel increased.

1.6.6.2

Building Closure Planning

The Depot's facilities engineer recognized early in the closure process that a flexible plan was needed to address closing buildings once they were vacated, and to determine what level of maintenance they should be given before and during layaway. Recognizing that the answers to some of these questions would not be known until reuse interests were decided, the Facilities Engineer and Johnson Controls personnel laid out a detailed plan for each building based on three levels of maintenance and either near-term or long-term anticipated reuse potential. Instead of continuing maintenance scheduling as usual, the planners and estimators shifted their focus to identifying those exterior and interior maintenance tasks that would be needed to shut the building down and lay it away. Routine maintenance other than emergency repairs was done only if it supported the closure plan. Details of this plan were based on building closure and layaway guidance provided in AMC-Pamphlet 235-1 and USACERL Technical Report TR M-91/23.

Based on input received from other Depot managers and tenants at the weekly Executive Steering Committee meetings, a building closure plan was developed that established a tentative timetable for vacating each building by the current occupant. This schedule was updated on a monthly basis

in those same meetings as plans from the other disciplines solidified. In some cases, functional moves into vacated buildings had to be accommodated to consolidate operations into a smaller footprint. The plan minimized multiple moves, but did impose two major consolidations, with the final move to a small base operations support footprint having several options depending on what reuse interests looked most promising at the time of consolidation. While details of the building closure plan changed with time, the plan proved to be an adequate road map, leading management through the decision process at the right points in time. A late edition of the building closure plan can be found in Chapter 2 of this document.

As the building closure plan took shape, the facilities team realized that they would be facing an imposing task to accomplish all building layaway actions if they waited until buildings were vacated, since a large number of buildings would be occupied until near the end of the closure process. The partial solution was to start exterior layaway actions in late 1993, nearly a year before some of the buildings would be vacated. This left mostly interior work to do once the occupants were gone.

To ensure that a building was properly cleared by its occupants, a SOP and a check list were developed and provided to the building occupant during a preliminary walk through. This list identified items that needed to be removed, and provided direction on what to do with items that needed to remain. A tiger team was set up which assisted occupants in vacating areas, ensured that accountability for equipment was cleared, and verified that supplies and trash were removed from the area. When the occupant felt that the area was ready to be turned over to facilities, the Facilities Engineer scheduled a walk-through that included the occupant, facilities, environmental, safety, and information management personnel to identify those items that needed to be addressed by any of the attendees prior to signing off for the building. This process not only clarified any remaining actions required from the occupant, but also identified what the other functional area personnel needed to include in their planning to complete the layaway of the building.

1.6.6.3

Utilities Operations and Issues

The facilities team dealt with two primary utilities issues as closure and reuse planning proceeded. First, utilities service needed to be maintained for remaining Depot operations and tenants, and for new lessees. Second, the utility systems had to be prepared for operations under a caretaker mode with several sub-users, or for transfer to another operator(s).

To maintain existing utility services, the Facilities Engineer and Johnson Controls personnel continued preventive maintenance on existing systems, disconnected systems whenever possible, and began preparing historical usage profiles on buildings, which could be useful for possible future leases. When closure was announced, a project was already underway to convert the existing centralized steam distribution system to a network of packaged boilers that would be leased rather than purchased. The Facilities Engineer decided that this decentralization still made sense in light of closure and reuse possibilities, so the project was completed and the central steam plant was laid away. Packaged boilers were used for all loads in the 1993-94 heating season, and only three of the five were activated during the 1994-95 heating season. Gas lines were repaired

if leaks were detected (the piping system was old). In several cases where gas usage was not critical branch lines were abandoned in place by shutting off valves rather than being repaired. In two cases, small electric-fired heaters were installed in individual buildings rather than repair the gas line serving the buildings. This approach was taken since in all likelihood pipe diameters were not consistent with current practice and complete or major replacement of the gas distribution system would be necessary as part of redeveloping the property. Finally, submeters were established where practical to isolate the reserve areas from the rest of the property, since they would remain as separate entities after closure and thus would need to be billed separately.

The Facilities Engineer and Johnson Controls personnel also hosted numerous visits by representatives from the City of Sacramento, local utility providers, and private companies to make detailed analyses of the existing utility networks. A study completed by the City indicated that nearly all utility systems would need to be extensively refurbished to meet local code requirements. These findings were basically supported by the local utility companies who did not show interest in taking over the utility systems unless improvements were made or until significant usage was defined for the site. While the electrical system had been upgraded fairly recently, the poles did not meet height requirements for safe work clearances around the high voltage lines. Also, the large warehouses had transformers mounted inside on the top of rest room structures, which did not meet local code requirements. The gas system used low pressure 8-inch lines, while the local utility provider was standardized on high pressure distribution. The Army took the position that the utility systems were to be provided as is. Thus, only repairs that affected current operation of the system were done by the Army.

Full sets of utility system drawings were provided to utility companies and to the City of Sacramento for reuse planning. In addition, when it became apparent that the City would assume responsibility for utility systems as part of the economic development conveyance, the Depot also provided historical usage records for major buildings to use as a baseline for marketing the property and for establishing a billing structure.

1.6.6.4

Roads and Grounds

Maintenance of roads and grounds was phased out gradually during the last two years of closure and was reduced in interior areas, especially after Depot mission operations ceased in April 1994. Areas around the front gate and administration building were maintained in good condition up to the actual closure and transfer ceremony in March 1995. As closedown and cleanup actions progressed, weeds were cleared and streets swept. Holes created by gas line repairs, etc., were sealed over, but major road resurfacing was not done. During the summer of 1994, mowing of open areas was done to reduce fire danger, but routine grounds maintenance was otherwise cut back in those areas. After the summer of 1994, pesticide and herbicide programs were discontinued, and the City was notified that they would not be resumed by the Army in the spring of 1995 since transfer of the property was planned for that time.

1.6.6.5

Real Estate Records

Complete sets of building and utility drawings were provided to the City of Sacramento prior to actual transfer of the property so it could review the documents and make copies as needed for reuse planning. Copies of appropriate drawings were also provided to other property recipients such as the Army Reserve and Foodlink who would remain on portions of the Depot site. An archive set of drawings was provided to a historical repository located on the California State University, Sacramento campus. Since the City was asking for all the available property, they became the primary repository for Depot drawings. However, the Depot's Facilities Engineer felt that someone within the Army should also have records in case questions should arise after the Depot closed and its staff was no longer available. Someone also had to assume interim accountability for the 65 acres of Depot real estate that was not transferred to the City in March 1995 because of remaining environmental cleanup, but is expected to be transferred to the City by the end of 1996. Initially, Tooele Army Depot's facilities office agreed to hold the records but did not want accountability for the remaining acreage. Since Sierra Army Depot is both closer and within the State of California, and thus deals with the same state regulators, both the records and the real estate accountability were transferred to Sierra Army Depot in March 1995.

1.6.7

Resource Management

1.6.7.1

Initial Issues

The Depot, as a DBOF activity, was funded through reimbursements for work accomplished for other activities and commands. The Depot developed proposals for the production cost of projected workload and after negotiation with the requiring command, the work was assigned to the Depot. Project funding information was identified and maintained in the SDS automated files. When the Depot closure was announced, the Directorate of Resource Management had over 122 personnel assigned. These personnel managed an extremely complicated budget and financial system that tracked funds throughout the year and provided extensive reports to higher headquarters and into the automated financial system. The directorate was incrementally downsized over the closure years as missions were transferred or no longer needed and as personnel were lost to retirement and reassignment. Key points in this downsizing follow:

- The Western Region Finance and Accounting Division was transitioned to the Defense Finance and Accounting Service (DFAS). The DFAS region supporting Sacramento was located at Red River Army Depot but after the transfer, a small DFAS office remained on Depot at Sacramento to support required financial activities such as pay, cash disbursements, and payroll changes and corrections. This office was phased out in the fall of 1994 and all support came from the main office at Red River.
- When the maintenance mission was closed out, the positions supporting maintenance workload tracking, funding, and productivity management were no longer needed.

- As the Depot closed, management analysis functions were less important. This office gradually downsized to one person and then all remaining functions were transferred to higher headquarters.
- For the last year of closure the resource management functions were handled by three and then two personnel who were retirement eligible and who agreed to remain until the last VSIP window was ready to close. These employees with their experience and exceptional productivity were able to develop the budget for fiscal years 1995–1997.
- In March 1995, the Tooele Army Depot took over the Sacramento automated systems and assumed responsibility for all remaining resource management functions. The two remaining Sacramento resource management employees retired on April 30, 1995.

1.6.7.2

Budget Development

Budget development became simpler throughout the closure because the sources of funds were fewer and the requirements became smaller. Budget development was always requirements-based with each office establishing its budget in category areas based on its mission. These requirements were consolidated for the Depot by Resource Management personnel. Several review boards were held to discuss the consolidated budget and develop options for the final command budget. The final budget was then approved by the commander and forwarded to Depot System Command Headquarters for approval and resourcing. After March 1994, only small amounts of residual maintenance funds were available and most funding was allocated through BRAC accounts at DESCOM and AMC. Other funding was provided through the Operation and Maintenance account. As the closure evolved, Sacramento leadership was able to downsize quicker than originally intended through accelerated attrition and placement of workers and early closure of the maintenance operation. The development of the Packard Bell reuse option meant that fewer caretaker funds were necessary. This development saved caretaker funds previously budgeted for \$10 million in 1994, \$7 million in 1995 and \$1.5 million in 1996 and 1997.

1.6.7.3

Disposition of Files and Responsibility

In January 1995, a final list of remaining recurring resource management tasks was passed to Tooele Army Depot. Tooele personnel traveled to Sacramento in February 1995 to observe a budget cycle and to become familiar with the Sacramento account procedures. In March, a Sacramento resource management team traveled to Tooele to assist in the monthly cycle and upon their departure all functions for the Sacramento domain became the responsibility of Tooele. All open files and backup documents were transferred to Tooele and all other relevant information was archived.

1.6.7.4

BRAC Costs

One of the most difficult issues in obtaining funding for the Depot over the last year of operation was determining which costs were BRAC costs that could be funded out of the limited BRAC funding available for AMC and DESCOM. Most costs associated with the closure were BRAC but approval was required for each category before funds were released. Funding was available for civilian Permanent Change of Station (PCS), movement of supplies and equipment, civilian severance pay, real property maintenance such as mothballing facilities and some limited facilities renovation at activities receiving supplies or missions from the Depot.

1.6.8

Total Quality Management (TQM)

Depot management fully embraced TQM in 1988. A new dedication to quality and extensive training of personnel over the next two years in the TQM philosophy had a significant impact on the process of closure and the readiness of management and employees to adapt and excel during the chaotic base closure environment.

1.6.8.1

History and Impacts of Closure

In 1988, all senior management down to Division Chiefs, the Union President, and key personnel from the Base Services Contractor, Johnson Controls World Services, attended the Deming 4-day seminar and received an additional 40 hours of TQM instruction from the Navy Personnel Research and Development Center (NPRDC), San Diego. On-Depot training was primarily in-house with guidance and augmentation by NPRDC, the Air Force, and commercial sources. On-Depot facilitators and trainers were groomed from these sources. By the end of 1990, over 60 percent of the total Depot population had participated in TQM training.

Evidence of the success in adapting TQM philosophies was demonstrated by the following Depot achievements:

- Winner of the Public-to-Private head-to-head competition with Hughes Aircraft for the Firefinder Radar overhaul program.
- Increased Bradley Sight Repair production capability from 13 to 24 per month saving \$1.7 million annually.
- Won the Army Chief of Staff Community of Excellence Award in 1988.
- Won the President's Council for Management Improvement Excellence Award in 1990.

Despite this success and the shaping of a very customer-oriented workforce in 1991, Sacramento was given a different mission—closure. The Depot had to adjust from a concern for meeting the needs of traditional customers, i.e., the Major Subordinate Commands, to determining the disposition of immense amounts of equipment, facility closure, taking care of Depot personnel and

reuse of the Depot. During the next 5 years, the adaptability of personnel at the Depot was a key factor as missions, authorized strengths, organizational structures and personnel changed rapidly. This adaptability was greatly enhanced by the TQM focus on supporting missions and planning processes.

There were four key closure planning forums at the Depot that grew out of the TQM emphasis on customer support, continuous process improvement and empowering the workforce. All these groups emphasized teamwork, communication, group ownership of problem areas, and innovative problem resolution. These were the ESC, the Environmental Coordination Committee, the Closure Process Action Team and the Infrastructure Working Group. In the environmental Superfund cleanup process, the exceptional success of the TRC was also influenced by the TQM philosophy.

1.6.8.2

Executive Steering Committee

The ESC was initially the oversight committee for implementing TQM at the Depot. After the Depot closure was announced, the ESC became the primary Depot closure planning group. The ESC met weekly and was chaired by the Depot Commander and attended by all directors, special staff, tenant organizations and other key personnel. The planning structure included a weekly agenda emphasizing current closure issues as well as long-range planning.

1.6.8.3

Environmental Coordination Committee

The purpose of this committee was initially to track all environmental programs at the Depot, but it became a group ensuring that environmental programs and base closure actions were coordinated at the worker level. The committee was attended by Depot base closure and environmental staff, ACOE representatives, Johnson Controls World Services representatives, and the ACOE's environmental contractor, Foster Wheeler Environmental. This was a mid-level manager working group.

1.6.8.4

Closure Process Action Team

This team focused on all internal base closure actions associated with equipment turn-in, facility clean-up, mothballing and the accountability of equipment and supplies. Discussions between technical personnel working in all base closure areas helped greatly in focusing on problem areas, using resources wisely and coordinating work efforts. This was a working level group.

1.6.8.5

Infrastructure Working Group

This group brought all tenant activities, ACOE representatives, the environmental staff, the contractors, and Depot facilities and base closure personnel together to address issues regarding the identification, upgrading and transfer of utility and real estate infrastructure to other activities when the Depot closed.

1.6.9

Public Relations

1.6.9.1

General

Maintaining good public relations was a major factor in SADA's success throughout the closure and reuse process. From the initial announcement of proposed closure of the Depot, SADA's public affairs office took the lead in providing news releases, arranging for media access to employees for comments, and ensuring that up-to-date information was disseminated to Depot employees. This important role continued through Depot downsizing, environmental cleanup, restoration advisory board and other public forums, reuse inquiries, closure ceremonies, and transfer of the property.

Having a good spokesperson for the Depot was essential. The Public Affairs Officer (PAO) was a critical part of the Commander's staff, serving as his interface with the community and the media. All inquiries from outside the fence were either fielded by the public affairs office or the office provided an advisory role. It also helped to have a Public Affairs Officer who knew the local media personalities so that if the Commander made a personal statement to the media, he knew beforehand any agendas the media personalities might be bringing to the interview.

To provide a complete and consistent view of the Depot's closure, it was essential that the public affairs office be kept aware of all facets of the process. The SADA PAO was included in all planning meetings to both learn of, and to advise on, major issues. The PAO was extensively involved in all environmental coordination and RAB meetings, and attended all City Reuse Commission meetings. For internal communication, the PAO and her staff set up all town hall meetings and LAN broadcasts, maintained publication of the Depot newspaper and later a newsletter when a full-fledged newspaper could no longer be supported, and served as a clearinghouse of information for employees between group meetings. Employees who had been on the maintenance lines prior to downsizing were detailed into the public affairs office to provide grassroots perspective and communications to the remaining workforce. This proved effective both in maintaining information flow and in providing cross training which proved beneficial to some of the displaced employees. It also helped convey to the workforce that no secrets were being kept from them.

Good public relations began early and remained extensive throughout the process. The time invested paid for itself many times over in effective communication and minimal difficulties with the community, media and Depot workforce.

1.6.9.2

Inquiries, Tours and Visits to the Depot

Inquiries and visits proved to be another significant facet of public relations. These inquiries or visits tended to focus on one of two themes: inquiries about the availability of facilities or equipment, and the desire of other closing sites to hear how we accomplished closure and reuse. Depot management was proactive in each of these areas. The Depot Commander invited commanders from all BRAC 93 sites to visit the Depot and benefit from our experiences. Many of these activities took advantage of his offer, and briefings were given to their commanders and key members of their staffs by the Depot department managers.

The City of Sacramento and the Depot agreed early on to aggressively market the facility in hopes of establishing some leases that would bring jobs back to the site and establish revenue to cover the cost of continuing maintenance. Many of the inquiries regarding available facilities resulted from that marketing effort. Inquiries about available equipment seemed to materialize from everywhere once closure was announced, and this interest continued until the last door was locked.

Figure 1-10 summarizes inquiries regarding the reuse of facilities or equipment. While some of these were handled over the phone, most involved a site visit to view the property in question, and then follow-up paperwork depending on the level of interest. Written requests for personal property from other agencies or DoD were handled by the BRAC office, and if appropriate, were forwarded to the Logistics Team. Inquiries about reuse were handled by a team consisting of the BTC and members of the BRAC office. A standard information sheet was filled out on each of these inquiries with points of contact and scope of interest. If the interest solidified, a package of support information was requested from the interested party to more clearly define the scope and potential impact of the request. This package then served as the basis for lease documents for those cases where a lease was desired. A complete listing of inquiries regarding facilities and equipment can be found at Appendix H, Reuse Inquiries.

1.6.9.3

Closing Ceremony

After serving the nation for 53 years, the Depot was officially closed on March 3, 1995 at an emotional ceremony attended by over 1,200 people, including many former Depot employees. There were a large number of dignitaries attending including Major General Benchoff, Commander of the Industrial Operations Command; California Lt. Governor Gray Davis; Mark Wagner, Special Assistant to the Assistant Secretary of Defense for Economic Security; and Sacramento Mayor Joe Serna, Jr.

The mood was mixed with a blend of sadness and nostalgia for former employees and pride for Sacramento and the closure team who had made a seemingly impossible transition from federal to civilian use of the facility. "Everyone involved with the Depot during closure, whether from the Department of Defense, the Army, Federal, State or local agencies, has performed magnificently," said Lt. Colonel Todd Blose, the final depot commander.

"An unusual atmosphere ruled every effort by the numerous agencies involved in this area," expressed Lt. Colonel Blose during the ceremony, "that of mutual respect, cooperation, and the vision of a common goal—to clean up the Depot and return a safe facility to the community for reuse." The deed to 306 of the former Depot's 487 acres and the passing of the "Golden Key" was formally presented to Mayor Serna by Mr. Paul Johnson, Deputy Assistant Secretary of the Army for Installations and Housing.

A further reason for optimism was the concurrent opening of the Packard Bell Center where jobs lost from the Depot closure have been returned to Sacramento in another form. "We are absolutely thrilled by the speed and teamwork on this conversion," said Mayor Serna. "Having Packard Bell up and operating even before the base is turned over to the City of Sacramento has got to be a national benchmark for performance." Packard Bell began full computer production in April 1995 and has since made plans to increase its Sacramento production center. "The City of Sacramento is gaining jobs and a revitalized economy. This is an outstanding example of successful reuse," said Mr. Wagner.

Lt. Colonel Blose summed up much of the emotion of the day in his speech when he said: "Today it is with great honor and satisfaction, but also with great sadness, that I report to you, 'mission accomplished.' The Depot has now completed its final mission — Closure with Dignity."

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Table 1-1. BRAC Project Team Members

Name	Title	Phone	Role/Responsibility
RAB CO-CHAIRMEN			
LTC Todd Blose	Commander, SADA	916-557-7936	Co-chairman (Reuse Mission Completed; Transferred to Pentagon)
Elmo Slider	Reuse Commission Representative	916-278-6853	Co-chairman; Sacramento Local Community Representative
RAB PUBLIC MEMBERS			
Dick Walker	RAB Alternate Co-chair	916-557-7936	Public Member
Francis Clinkscales	Local Area Representative	916-557-7936	Public Member
Debra Middleton	Local Area Representative	916-557-7936	Public Member
Marjorie Namba	Local Area Representative	916-557-7936	Public Member
Verne Gore	Local Area Representative	916-557-7936	Public Member
Robert Echols	Local Area Representative	916-557-7936	Public Member
Daniel Nunn	Local Area Representative	916-557-7936	Public Member
Lillie Reed	Local Area Representative	916-557-7936	Public Member
Mildred Hatcher	Local Area Representative	916-557-7936	Public Member
Ted Ortiz	Local Area Representative	916-557-7936	Public Member
Barbara Currie	Local Area Representative	916-557-7936	Public Member
BRAC CLEANUP TEAM MEMBERS			
Dan Oburn	BRAC Environmental Coordinator/Remedial Project Manager	916-557-7936 FAX -7937	Army Project Manager (Lead Agency) Current Co-chair of RAB
John Suazo	BRAC Environmental Specialist	916-557-7935	Alternate to Dan Oburn
Marlon Mezquita	U.S. Environmental Protection Agency BCT Representative	415-744-1527	USEPA Project Manager
Diana Peebler	California Environmental Protection Agency BCT Representative	916-324-4754	Environmental Assessment and Reuse Specialist
Christine Parent	California Environmental Protection Agency BCT Representative	916-255-3707	Cal/EPA Project Manager
Roger Staab	Base Transition Coordinator	916-921-2525	Base Transition Coordinator Liaison with Community (Reuse Mission Completed; Retired)

Table 1-1. BRAC Project Team Members

Name	Title	Phone	Role/Responsibility
OTHER KEY PARTICIPANTS			
Robert Reeves	California Environmental Protection Agency Water Board Representative	916-255-3050	Central Valley Regional Water Quality Control Board Project Manager
George Siller	Technical Project Manager Army Corps of Engineers	916-557-7418	IRP Project Manager Contract Management and Oversight
Wandell Carlton	Technical Project Manager Army Corps of Engineers	916-557-7424	BRAC Project Manager
Rick Solander	Former Chief, Environmental Management, SADA	916-557-7936	(Reuse Mission Complete; Transferred to McClellan AFB)
MAJ Rod Gettig	Program Manager, ACOE	916-557-7490	Overall SADA BRAC Program Manager for ACOE Sacramento District
Luke Harp	Director of Engineering and Logistics, SADA	916-557-7936	Facilities Engineer, SADA; Transferred to Brooks AFB
Roxanne Yonn	Chief of Public Affairs and Protocol, SADA	209-982-2837	Chief of Public Affairs and Protocol, SADA
Susan Krinks	Realty Specialist, ACOE Real Estate	916-557-6994	Real Estate Project Manager, SADA
Joe Serna, Jr.	Mayor, City of Sacramento	916-264-5948	Mayor, City of Sacramento
Bill Farley	City of Sacramento Representative	916-264-7223	City of Sacramento, Economic Development Manager
Congressman Robert Matsui	Congressman – 5th District	916-551-2846	United States Government Congressman
Congressman Vic Fazio	Congressman – 3rd District	916-666-5521	United States Government Congressmen
Senator Pat Johnston	State Senator – 5th District	916-445-2407	California Government State Senator
Assemblyman Larry Bowler	State Assemblyman – 10th District	916-445-7402	California Government Assemblyman
Councilman Darrell Steinberg	City Councilman – 6th District	916-264-7006	City of Sacramento City Council Member & Reuse Commission Representative
TECHNICAL SUPPORT CONTRACTORS			
John Carrier Foster Wheeler Environmental Corporation	Program Manager, Consultant 2525 Natomas Park Dr., Suite 250 Sacramento, CA 95833	916-921-2525	Technical Support to SADA for Environmental Operations and BRAC Closure
Pamela Wee Kleinfelder Associates	Program Manager, Consultant 3077 Fite Circle Rancho Cordova, CA 95827	916-366-1701	Technical Support to SADA for IRP and Site Cleanups

Table 1-1. BRAC Project Team Members

Name	Title	Phone	Role/Responsibility
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For Further Information Contact Dan Oburn, SADA BRAC Environmental Coordinator, at:

Commander, USAED Sacramento
CESPK-ED-E (SADA) Dan Oburn
1325 J Street
Sacramento, CA 95814-2922
(916) 557-7936 - Phone
(916) 557-7937 - Fax

Table 1-2. Property Acquisition Summary

Tract No.	Previous Land Owner	Acreage Fee Land	Lease	Easement Land	Acquisition Date
1	Robert Blake	17.93			1945
2	Mario Bianchini and Dina Bianchini	79.80			1945
3	Daniel Cecchetti	80.00			1945
4	Nelson E. Dean Jr. and Helen J. Dean	80.00			1945
5	Don E. Gouldin and Margaret E. Gouldin	40.00			1945
6	C. Christophel	80.00			1945
7	De Vere C. Swayze and Helen Swayze	51.72			1945
8	William E. Booth and Vivien M. Booth	20.00			1945
9	James Passalis	20.00			1945
10	Central Pacific Railway Company	15.77			1945
11-A	Central Pacific Railway Company and Southern Pacific Company			No Area	1946
11-B	Central Pacific Railway Company and Southern Pacific Company			No Area	1946
12	Bruce Camp		2.78		1945
13	Chris Christophel		2.17		1945
14	Elder Creek School District		0.505		1945
15	C. Lamphere and Ola Lamphere		0.596		1945
16	Herbert E. Wilkinson and Abbie C. Wilkinson		1.74		1945
17-A	Ben Robertson and Annie M. Robertson		0.863		1945
17-B	Ben Robertson and Annie M. Robertson		0.247		1945
18	Le Roy Allen and Fannie Allen		0.183		1945
19	Arthur Araki and Margery H. Araki		0.697		1945
20	Charles C. Rigg and Rae M. Rigg		0.776		1945
21	Giulio Costa		0.757		1945
22	Clara M. Berriesford		0.757		1945
23	Albert Lazzarini		1.17		1945
24	S. B. Hyatt and Edna Hyatt		0.918		1945
25	Charles E. Hammond and Minnie M. Hammond		0.752		1945
26	Robeanie M. Bibb		0.872		1945
27	Antone Dias and Winifred Dias		1.28		1945

Table 1-2. Property Acquisition Summary

Tract No.	Previous Land Owner	Acreage Fee Land	Lease	Easement Land	Acquisition Date
28	State of California (Land Division) et al.		1.45		1945
29	Orin W. Waring and Virginia M. Waring		0.010		1945
30	Anna Chinco		1.81		1945
31	County of Sacramento		0.826		1945
32	Estate of Joseph Lechner, Deceased, William F. Crosby, Administrator		0.725		1945
33	John Waring and Laura Waring		0.339		1945
34	Richard R. Yoe and Ruth G. Yoe		2.39		1945
35	William R. Stepp and Beulah Stepp		0.022		1945
36	State of California (Highway Division)			0.266	1945
37	Morris Oppen		0.174		1945
38	Leland L. Rogers and Annie F. Rogers		1.36		1945
39	Dora Wire		5.37		1945
40	Central Pacific Railway Company and Southern Pacific Company			0.524	1946
41	Minoru Fujii		0.185		1945

Table 1-3. History of Installation Operations

Period	Type of Operation	Weapon System	Hazardous Substance Activities	Map Reference^①
Pre-1945	Farming, residential	N/A	Fuel storage, pesticides/herbicides	1
1945–1946	New construction	N/A	Construction	—
1950–1953	Metal plating operations (Building 251, Bay 6)	N/A	Metal plating, spray painting	2
1953–1977	Metal plating operations, electronic repair (Building 320)	PDS-4, M-16 sights, night vision devices	Metal plating, spray painting	3
1954–1993	Industrial graphic arts (Building 320)	N/A	Photo-chemical etching, solvents, paint booth, and inks	3
1958–1994	Nucleonics and Calibration (Building 300)	N/A	Repair, handling, storage, and packaging of radioactive items	4
1970–1994	Laser and infrared missions	N/A		5
1971–1993	Shelter repair facility	N/A		—
1971–1994	Electro-optics repair facility (Building 555)	Laser range finders for M-1 Abrams tanks and night vision devices	Use of solvents	7
1977–1993	Metal-plating facility (Building 420)	PDS-4, M-16 sights, night vision devices	Metal plating, paint shop	8
1994	Operations officially cease			—
March 3, 1995	Army transfers 306 acres to the City of Sacramento			—

^① For locations see Figure 1-7.

N/A - Not Applicable.

Table 1-4. Historical Hazardous Waste Generating Activities

Building or Facility	Unit	Activity	Name of Waste Material	Generation Rate (lbs./year)	Disposition
154	SADA	Health Clinic	Developers, fixers, alcohols	10	Inactive March 1995
205	SADA	RR Equipment Maintenance Shop	Metals dust, caustics, perchloroethylene	500	Inactive
241	DLA	Hazardous Materials Storage	Hazardous materials turn-ins	64,800	Inactive
254	SADA	Storage Shed	Paints, solvents/thinners	23,822	Inactive
257	SADA	General Purpose Warehouse, CARC Facility	Paints, solvents/thinners, paint booth filters	1,000	Inactive March 1995
303	SADA	Holding Tank (IWTP-clarifier)	Plating wastewater, metal sludge	50,000	Inactive
308	SADA	Holding Tank (IWTP-clarifier)	Plating wastewater, metal sludge	50,000	Inactive
320	SADA	Graphic Arts	Solvents, coolants, oils, greases, paints, radioactive materials	1,000	Inactive
320	63 rd 124 th ARCOM	Vehicle Maintenance	Paints, oils, lubricants	Minor	Inactive
325	SADA	Chemistry Lab	Acids, bases, solvents, oils	500	Inactive March 1995
348	SADA	Hazardous Waste Accumulation Site	Petroleum products, antifreeze, solvents, paints, metal dust	12,713	Inactive March 1995
352	SADA	Hazardous Waste Storage, East of Building 352	Oils, acids, caustics, solvents	12,713	Inactive March 1995
361	SADA	Paint Booth	Paints, solvents/thinners, paint booth filters	1,500	Inactive March 1995
411	SADA	Former Battery Acid Handling Facility	Sulfuric acid	5,000	Inactive March 1993
412	SADA	Hazardous Waste Container Storage Area	Acids, caustics, combustibles, flammable material, pesticides, PCBs, paints, solvents/thinners, asbestos	—	Inactive Permit to be closed November 1995
413	SADA	Cyanide Building	Cyanide filters	590	Inactive
416	SADA	IWTP & Control Building	Acids, caustics, oxidizers, metal sludge	40,000	Inactive March 1995

Table 1-4. Historical Hazardous Waste Generating Activities

Building or Facility	Unit	Activity	Name of Waste Material	Generation Rate (lbs./year)	Disposition
419	SADA	Storage Shed	Paints, solvents/thinners	23,822	Inactive March 1995
420	SADA	Painting and Plating Shop	Paints, solvents/thinners, paint booth filters, blast media with metals	86,084	Inactive March 1995
423	SADA	Plastic Media Blast Facility	Blast media with metals	44,500	Inactive
426	SADA	Hazardous Materials Handling Facility	Paint, aerosol, solvent, thinner, oil, petroleum, and lubricant cans, PCB, asbestos	—	Inactive March 1995
437-438	SADA	Pesticide Mix Area	Pesticides	1,000	Inactive
552	SADA	Accumulation Point	Paints, solvents/thinners	11,000	Inactive
555	McClellan	Electro-Optics Facility	Radioactive materials, paints, solvent/thinners, paint booth filters	1,500	Inactive March 1995
601	SADA	Auto Hobby Shop	Petroleum products, metal dust, antifreeze, solvents	13,000	Inactive
662	124 th ARCOM	Hi-Tech Training Center	Oils, antifreeze, alcohols, freon	13,000	Inactive
699	AAFES	Service Station (3 Uses)	Gasoline, oils, antifreeze	13,000	Inactive March 1994
8277 Elder Creek	Navy	Navy/Marine Reserve	Paints, oils, antifreeze, alcohols	13,000	Inactive
Shed 1, by Building 380-381	1118 th	Hazardous waste storage area	Paint, thinners, oil, antifreeze, alcohols	13,000	Inactive
Shed 2, by Building 380-381	1118 th	Hazardous waste storage area	Paint, thinners, oil, antifreeze, alcohols	3,100	Inactive
Shed 3, by Building 380-381	1118 th	Hazardous waste storage area	Paint, thinners, oil, antifreeze, alcohols	3,100	Inactive
Shed 4, by Building 380-381	1118 th	Hazardous waste storage area	Paint, thinners, oil, antifreeze, alcohols	3,100	Inactive

Table 1-5. Off-base Properties

Description	Acreage	Date of Acquisition	Environmental Status	Location	Remarks
Benicia Army Cemetery	1 Acre	1849	Uncontaminated	Benicia, California	Sub-installation of former Sacramento Army Depot listed on National Register of Historic Places. Transferred to Sierra Army Depot, March 20, 1995.

Table 1-6. Pre-closure On-base Tenant Units^①

Tenant	Location
U.S. Army Reserve Training Center ^{②③}	Reserve Enclave
California National Guard ^{②④}	Reserve Enclave
DLA, DDRW	Buildings 251 (Bays 3-5); 242; 244; 253 (Bays 2-4 & 6); 246; 255 (Bays 2-6); 257 (Bays 2-6); 220
TASA	Buildings 150 and 251 (Bay 6)
U.S. Army TMDE Support Center	Building 300
U.S. Army Health Clinic	Building 154
Navy/Marine Corps	Southwest corner of post
AAFES gas station	Building 699 (gas station) Building 680 (east) retail store
DFAS	Building 150
Navy Broadcasting	Building 251 (Bay 6)
Maintenance Assistance and Instructor Team (Presidio, MAIT 2)	Building 690
Federal Bureau of Investigation	Antenna top of Building 251
Schools Federal Credit Union	Building 149
Operation Santa Claus	Building 253 (Bays 1 & 2)
Boy Scouts	Building 665
Red Cross	Building 251 (Bays 1 & 2)
1118 th Signal Battalion	Buildings 255 (Bays 1 and 2), 257 (Bay 1), 381, 382, 383, and 384 ^⑤

^① All hazardous wastes generated by SADA and tenant activities are disposed of by DRMO, McClellan AFB.

^② Reserve Enclave and California National Guard are assisted similar to tenant activities as long as the Depot has staff to facilitate. Property in the southeastern section of the Depot has been transferred to these organizations and they are not considered part of the disposal process.

^③ With activation of the Reserve Enclave in September 1993, the U.S. Army Reserves took ownership of the following Buildings 650, 652, 662, 669, 675, 680, 681, 682, S-667, T-651, T-653, T-654, T-655, T-656, T-657, T-658, T-659, T-660, T-663, T-664, T-665.

^④ With activation of the Reserve Enclave in September 1993, the California Army National Guard took possession of Buildings 677, S-689, S-690, S-691, S-692, S-693, S-694, S-695, S-698, T-640, T-641, T-642. Title to the property was transferred in October 1994.

^⑤ Unit was disbanded as part of BRAC 91. In September 1993, it occupied Buildings 255 (Bays 1 and 2), 257 (Bay 1), 381, 382, 383, and 384.

Figure 1-1a
Biosketches of

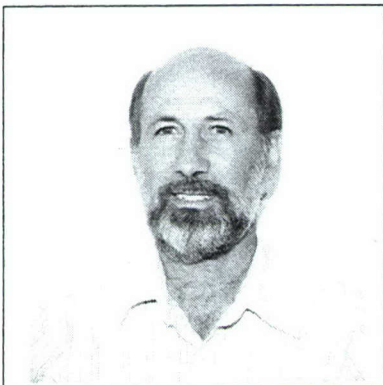
LTC Todd E. Blose, Roger Staab, and Dan Oburn



LTC Todd E. Blose, Commander, Sacramento Army Depot

LTC Blose served as the 34th and final Commander of SADA. As Depot Commander, he was responsible for completing the close-down of the maintenance mission; transferring the remaining workload to other sites; establishing proactive programs to find jobs for employees displaced by Depot closure; turning in and accounting for all remaining Depot equipment; mothballing buildings; and completing environmental cleanup actions to support reuse of the property. LTC Blose co-chaired the joint Army-Community RAB and served as ex-officio member of the City's Army Depot Reuse Commission. Prior to joining the Depot, LTC Blose inactivated the 162d Ordnance Company in Sogel and transferred to the Southern European Task

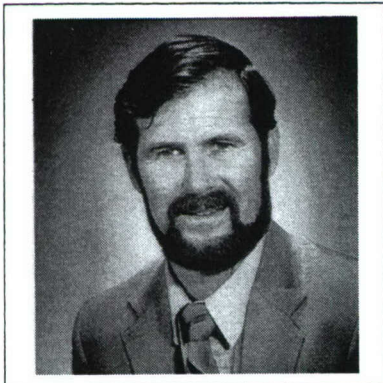
Force. Following the successful closure and transfer of the Depot in March 1995, LTC Blose was reassigned to the Department of the Army BRAC Office (DA-BRACO) in Washington, D.C.



Dr. Roger Staab, Base Transition Coordinator, Sacramento Army Depot

Dr. Staab served as both Senior Civilian and BTC during the final year of the Depot's closure and transition to reuse. As the BTC, he provided extensive coordination with the City of Sacramento and the ACOE, Sacramento District, in preparing the facility for reuse, establishing an interim lease with the City, and ultimately in transferring 306 acres to the City in March 1995, which facilitated the opening of the Packard Bell Center on the site. Prior to assuming the BTC duties, Dr. Staab served as the Depot's Civilian Executive Assistant from 1993-1994 following a two-month assignment as Director of Engineering and Logistics. He also served as Chief of the

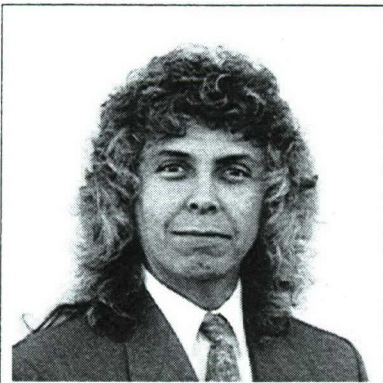
Special Projects Division, Directorate of Maintenance from 1989-1993. Following the successful closure of the Depot and transfer of the facility to the City, Dr. Staab retired from federal service and is now working part-time for Foster Wheeler Environmental Corporation.



Dan Oburn, BRAC Environmental Coordinator, Sacramento Army Depot

As the BEC, Mr. Oburn has the authority and responsibility for the execution of all environmental compliance and cleanup programs related to the closure and transfer of SADA. Mr. Oburn is the Army's liaison and coordinator with public, federal, state, and local agencies involving all closure-related environmental matters. He provides direction on the use of BRAC funds, schedules and oversees environmental projects/cleanups, and signs environmental documents on behalf of the Army. Prior to becoming BEC, Mr. Oburn was a senior environmental protection specialist/installation restoration program manager for the Depot and has a strong background in the private commercial sector.

John Suazo, LTC Larry Greene, and Marlon Mezquita



**John Suazo, Environmental Protection Specialist,
Sacramento Army Depot**

Mr. Suazo was responsible for the coordination of all Resource Conservation and Recovery Act (RCRA) closure activities at the Depot. He developed Closure Plans, Health and Safety Plans, and Closure Certification Reports and acted as the Team Leader for the in-house decontamination team in the final cleanup of these sites prior to transfer. He has overseen all aspects of the cleanup and certification of closure of the Depot's Part B Permitted Storage Facility as well as the final removal and closeout of all underground storage tanks. Along with the BEC, Mr. Suazo acts as the Army's representative in managing the remaining remediation contracts

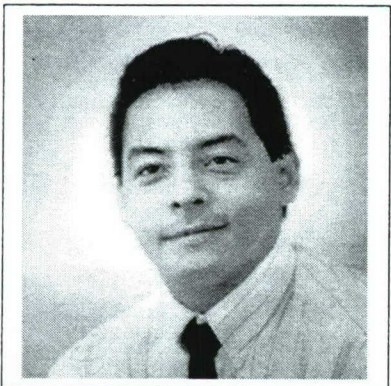
toward the final closeout, transfer and deletion of the Sacramento Army Depot from the NPL.



**LTC Larry F. Greene, Chief,
Base Resource and Closure Office, Sacramento Army Depot**

LTC Greene was assigned to the Depot from June 1992 until closure in May 1995. For the last two years of closure his office accomplished a multitude of tasks including management of internal closure actions at the Depot, resource management, information management, personnel, completion of the workload transition and chairing the Infrastructure Working Group, Environmental Planning Group and Executive Steering Committee. Prior to his assignment to Sacramento, LTC Greene served in assignments around the world including Secretary of the General Staff at HQ Depot System Command, in command of a petroleum terminal operating company in

Korea, as a Quality Assurance Officer in Manama. At Depot closure he retired and is working as the Administrative Services Officer for the Yolo/Solano Air Quality Management District.



Marlon Mezquita, USEPA Project Manager

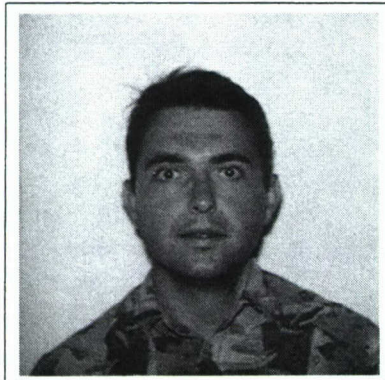
As an EPA official, Mr. Mezquita is responsible for overseeing investigations and cleanup of hazardous substances releases at the Depot. Mr Mezquita assures that proposed Department of Defense cleanups meet EPA's environmental standards. He represents EPA throughout all phases of the project, from scoping/planning to certifying closeout (cleanup complete) and assures that the terms and conditions of the SADA Federal Facility Agreement (FFA) are being met.

Biosketches of

Christine Parent, Robert Reeves, and Diana Peebler

Christine Parent, Cal/EPA Project Manager

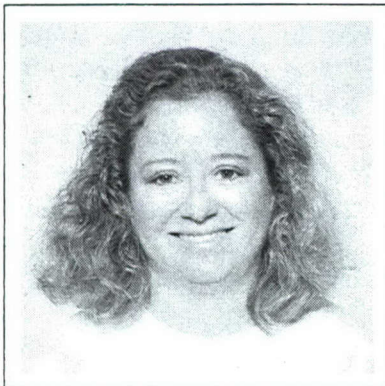
As the California Department of Toxic Substances Control Project Manager for the former Depot, Ms. Parent's role has been to coordinate the State of California's regulatory oversight for the investigation and selection of remedial options at the Depot. The State's concerns include toxicological, geological, air, solid waste, surface and groundwater, wildlife protection, public participation, and reuse considerations. In addition to her coordinating role, she is also responsible for the review of technical documents; ensures regulatory compliance with actions at the facility; and expedites the State's response for issues relating to protecting human health and the environment.



Robert Reeves, Central Valley Regional Water Quality Control Board, Project Manager

Mr. Reeves is Remedial Project Manager representing the Cal/EPA RWQCB and has been involved in the Depot project for the past 2½ years. Mr. Reeves' primary role has been to coordinate and provide oversight of all remedial investigations and remedial actions and assure that cleanup of contaminated soil and groundwater follows all applicable policies and requirements of the Cal/EPA RWQCB. Mr. Reeves' oversight helped assure that the Depot's remediation projects would restore and protect all waters of state that were impacted or could potentially be impacted by spills or past disposal operations. He also had an integral role in providing oversight of the

design and operation of several soil remediation systems, which will reduce the overall time it will take to provide remediation of the entire facility and will reduce the total cost of the cleanup.

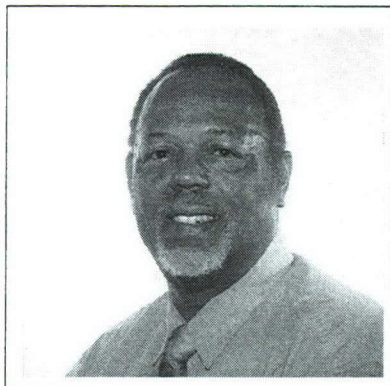


Diana Peebler, Environmental Assessment and Reuse Specialist, Office of Military Facilities, Base Closure and Conversion, Department of Toxic Substances Control

Ms. Peebler's role in the Depot's closure and transition to reuse was that of an Environmental Reuse Specialist. In this role Ms. Peebler facilitates integration of reuse and cleanup priorities. She is the lead in evaluating and coordinating state input on property transfer and lease documents including EBSs, FOSLs and FOSTs. Ms. Peebler facilitates resolution of environmental impediments to reuse with regulatory agencies, the military and reuse entities. She also supports the State Project Team as a core group member.

Biosketches of

Elmo Slider, Major Gettig, and George Siller



Elmo Slider, Co-Chairman of Restoration Advisory Board for the Sacramento Army Depot

Mr. Slider, an instructor at California State University, Sacramento, was instrumental in developing the SADA RAB. His efforts have included assisting in the RAB application process, establishing additional criteria for RAB membership, educating the public on the RAB's role, and informing the local community of Depot activities. Selected by his community peers, Slider has acted as the community co-chair since the RAB's inception in 1994. Prior to his efforts in establishing the Depot's RAB, Slider maintained a seat on the City's Sacramento Army Depot Reuse Commission.



Major Rodney W. Gettig, SADA BRAC Program Manager for ACOE, Sacramento District

Major Rodney W. Gettig served as the Army Corps of Engineers, Sacramento District, Project Manager for the BRAC 91 closure and transfer of the Depot. As Project Manager, he coordinated all Depot actions within the Sacramento District, and developed and maintained time lines showing the relationships among environmental cleanup, NEPA, and real estate projects to ensure that inter-dependencies were met. Major Gettig also served as district liaison with the Depot, Corps of Engineers headquarters, and the City of Sacramento.

Prior to joining the Sacramento District, Major Gettig was an Engineer Staff Officer at the Supreme Headquarters, Allied Powers Europe (SHAPE), in Casteau, Belgium. At the Sacramento District he worked as a Project Officer in the Regulatory Section, Construction-Operations Division prior to the Depot assignment. He is presently the Deputy District Engineer for Military programs in the Executive Office.

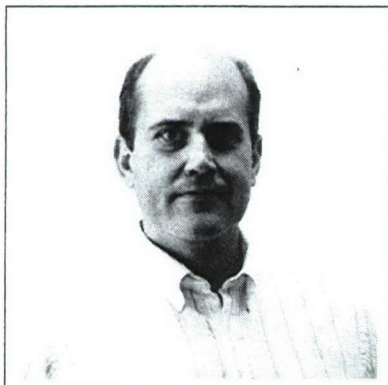


George Siller, IRP Project Manager, Contract Management and Oversight

Mr. Siller has served as a project manager for the past 10 years, and has a total service time with the U.S. Army Corps of Engineers of 20 years. As an IRP project manager for the District, he coordinated the combined efforts of professional architect-engineer and remediation contractors, installation personnel, major commands, community, and regulatory agencies. He is actively involved with the development of "cradle to grave" activities concerning the cleanup of CERCLA/RCRA contaminated sites. He has been the Corps of Engineers' point of contact for entire IRP since 1985. His work has included full service engineering and construction over-site efforts. RODs have

been completed for 5 of the sites he has overseen to date, with the last site having the first BRAC installation-wide ROD completed. Mr. Siller is currently working at Norton AFB, CA, and Defense Depot, Ogden, UT, passing along lessons learned to facilitate closure within the time constraints established by congressional legislation.

Wandell Carlton, Luke Harp, and Rick Solander



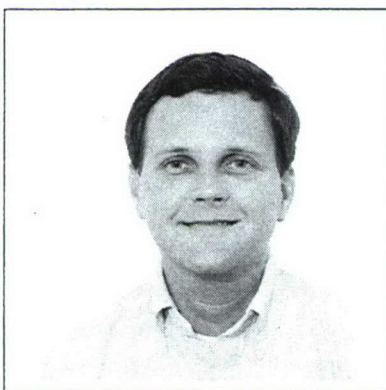
Wandell Carlton, BRAC Project Manager

Mr. Carlton has served as a manager for the past 11 years, including 7 years with the U.S. Army Corps of Engineers and 4 years as a civilian with the U.S. Air Force. He serves as the manager responsible for coordinating the combined efforts of the professional Architect-Engineer firm responsible for providing BRAC support documents, installation representatives, major commands, community, and regulatory agencies at the Depot. He is actively involved with the development of studies and designs from project initiation to project completion. He managed the environmental closure effort for the Depot, as well as Ft. Douglas, Utah; and assisted with infrastructure closure at Ft. Ord. He has also managed the design of major

construction projects for the government of Saudi Arabia, Wright Patterson AFB, Edwards AFB, Norton AFB, and the Sacramento Army Depot. Mr. Carlton holds a civil engineering degree from University of Cincinnati, Ohio.

Luke Harp, Director of Engineering & Logistics, Sacramento Army Depot

Mr. Harp served as the Depot's Facilities Engineer from March 1993 to March 1995. In April 1993, he was dual hatted as Director of Engineering and Logistics. In the latter role, he was responsible for environmental management, facilities issues including utilities operations and roads and grounds, and the turn in or transfer of over \$250 million in personal property. As Facilities Engineer, Mr. Harp provided government oversight for facilities work performed by the base operations contractor, and was responsible for all building shutdowns as part of Depot closure. Prior to assuming the facilities engineering duties, Mr. Harp was chief of the BRAC Division of the Depot's Integrated Logistics Support Office. Mr. Harp transferred to a General Engineer position at Brooks AFB, Texas in March 1995.



**Rick Solander, Chief, Environmental Management Division,
Sacramento Army Depot**

Mr. Solander managed and supervised all aspects of a comprehensive environmental compliance and restoration program as the Chief, Environmental Management Division. His key responsibility was to provide supervision and direction to ensure that all environmental documentation and activities were accomplished in a timely manner to effect a successful base closure and property transfer. Specifically, he provided direct oversight and final approval for the preparation and submittal of environmental base closure documents such as EBSs, CERFA documentation, EAs, and EISs. He was also responsible for organizing, training, and directing an in-house decontamination team

to clean RCRA-permitted facilities (buildings and structures) to make them suitable for transfer. He ensured that all clean-up activities were accomplished so that a Basewide ROD could be signed, which was a key requirement needed to get the EIS ROD approved.

Figure 1-1f
Biosketches of
Roxanne Yonn and Susan Krinks



**Roxanne Yonn, Chief of Public Affairs and Protocol,
Sacramento Army Depot**

Ms. Yonn's duties at the Depot included media relations, community relations and command information. It was her job to advise the Depot commander and develop a system to keep Depot employees, higher headquarters, the public, media and elected officials informed of the BRAC, closure, environmental and other public issues relating to the Depot and closure. She is currently working at Defense Distribution Region West, a Defense Logistics Agency in Stockton. There she is working in Public Affairs in the areas of media relations, BRAC and environmental public affairs and is editor of the region newspaper.

Susan Krinks

Ms. Krinks is a Realty Specialist in the BRAC Section of the Corps of Engineers' Real Estate Division. Ms. Krinks was assigned to SADA as the real estate project manager. She participated in the NEPA process and helped set priorities for disposal activities. Ms. Krinks was responsible for real property disposal and her duties included negotiation and administration of interim outgrants and preparation of all assignment documents to the Departments of Education and Health and Human Services. Ms. Krinks was the sole representative for the Army in negotiating the terms and conditions of the economic development conveyance for the majority of the installation to the City of Sacramento. She will continue to be the Army's principal contact for the remaining property transfers at SADA and has been assigned as the real estate project manager for a BRAC 95 installation.

Figure 1-1g
**Biosketches of
Pamela Wee and Kleinfelder, Inc.**



Pamela Wee, Program Manager for Kleinfelder

Ms. Wee is Program Manager and has provided oversight on the investigation of soil and groundwater contamination and engineering services for the environmental cleanup at the Depot since 1985. Ms. Wee has managed the project since 1991 and has been responsible for project oversight, management of budgets and personnel, and coordination with federal and state agencies. She has played a key role in conducting and managing the RI/FS and health risk assessments, and in developing recommended soil cleanup levels.

Kleinfelder, Inc.

Kleinfelder is an engineering consulting firm specializing in earth, air, and water sciences, including environmental engineering and science, geotechnical engineering, engineering geology, materials engineering and testing, and construction management. We have been solving complex problems for industrial, commercial, and government clients since 1961. Over the years, Kleinfelder has grown into a leading consulting firm with the capacity and diversified, qualified staff to provide comprehensive science and engineering services.

Kleinfelder has offices located in California, Arizona, Idaho, Nevada, Oregon, Utah, and Washington. With 700 personnel and multiple regional offices, Kleinfelder is able to manage multi-site projects effectively and to mobilize quickly to meet large-scale project requirements.

For the past ten years, Kleinfelder has performed as the prime consultant for the Depot IRP Program and the RI/FS Program. Work at the Depot has included soil, surface water, and groundwater sampling and testing; UST management; monitoring well installation; remedial investigations of surface and subsurface contaminants; removal and disposal of contaminated debris as part of the remedial investigations; preparation of health risk assessments and environmental assessments; preparation of environmental documentation including health and safety plans, quality assurance and quality control plans, data quality management plans, and community relations plans; studies for water reuse; preparation of design documents and cost estimates; and Title II engineering services during remediation. Remedial technologies which Kleinfelder has designed or pilot tested include pump and treat using ultraviolet radiation/oxidation; air sparging; soil ventilation; excavation and stabilization; excavation and disposal; and bioventing.

Kleinfelder has also been a key participant in the project's Technical Review Committee (TRC), a group consisting of federal, state, and local regulatory agencies; the ACOE; and federal, state, and local elected officials. As a participant in the TRC, Kleinfelder has assisted the ACOE with agency briefings, strategy development, discussions of ARARs resolution, and numerous other issues, all of which have kept the project progressing toward site cleanup and base closure.

John Carrier and Foster Wheeler Environmental Corporation



John Carrier, Program Manager for Foster Wheeler Environmental Corporation

Mr. Carrier has been the Program Manager for all environmental support work performed at the Depot since the contract with the ACOE was awarded in 1989. Mr. Carrier was responsible for managing the preparation of the BRAC Cleanup Plan; the Disposal and Reuse EIS; the EBSs; the FOSLs and FOSTs; the Environmental Assessment for Outgranting; the Leasing Execution Plan; and biological studies of threatened and endangered species. Mr. Carrier played a major role in coordinating work with the Army, the Corps, the City of Sacramento and the regulatory agencies and providing documentation required for the transfer of facilities to the City of Sacramento for lease to Packard Bell Company.

Foster Wheeler Environmental Corporation

Foster Wheeler Environmental has approximately 1,800 employees located in 20 offices nationwide. Foster Wheeler Environmental's employees focus on environmental assessment and restoration; hazardous, radiological, and mixed waste management; pollution prevention and waste minimization; and air and water quality compliance. Foster Wheeler Environmental has performed environmental studies associated with more than \$50 billion in capital investments for over 1,000 clients worldwide.

Foster Wheeler Environmental played a major role in the closure of the Depot. Over 70 task assignments have been received through 1995 totaling in excess of \$7 million. Foster Wheeler Environmental has provided various plans, reports and support to the Depot including:

- Environmental Impact Statement for the Disposal & Reuse of the Depot
- Environmental Baseline Surveys (EBSs)
- Findings of Suitability to Transfer/Lease (FOSTs/FOSLs)
- Miscellaneous Base Realignment and Closure (BRAC) Support Documents
- Infrastructure Condition Studies
- Data Management Support for the Preparation of Radiological Studies
- RCRA Part-B permit renewal/RCRA Closure Plans/RCRA facility closures
- California Air Toxic Hot Spot regulations
- Hex-Chrome Air Emissions Compliance Plan
- Traffic Management Plan
- Hazardous Materials Risk Management Plan
- NPDES Permit Application
- Bid specifications for removal of Underground Storage Tanks (USTs)
- Natural Resources Management Plan
- Waste minimization studies

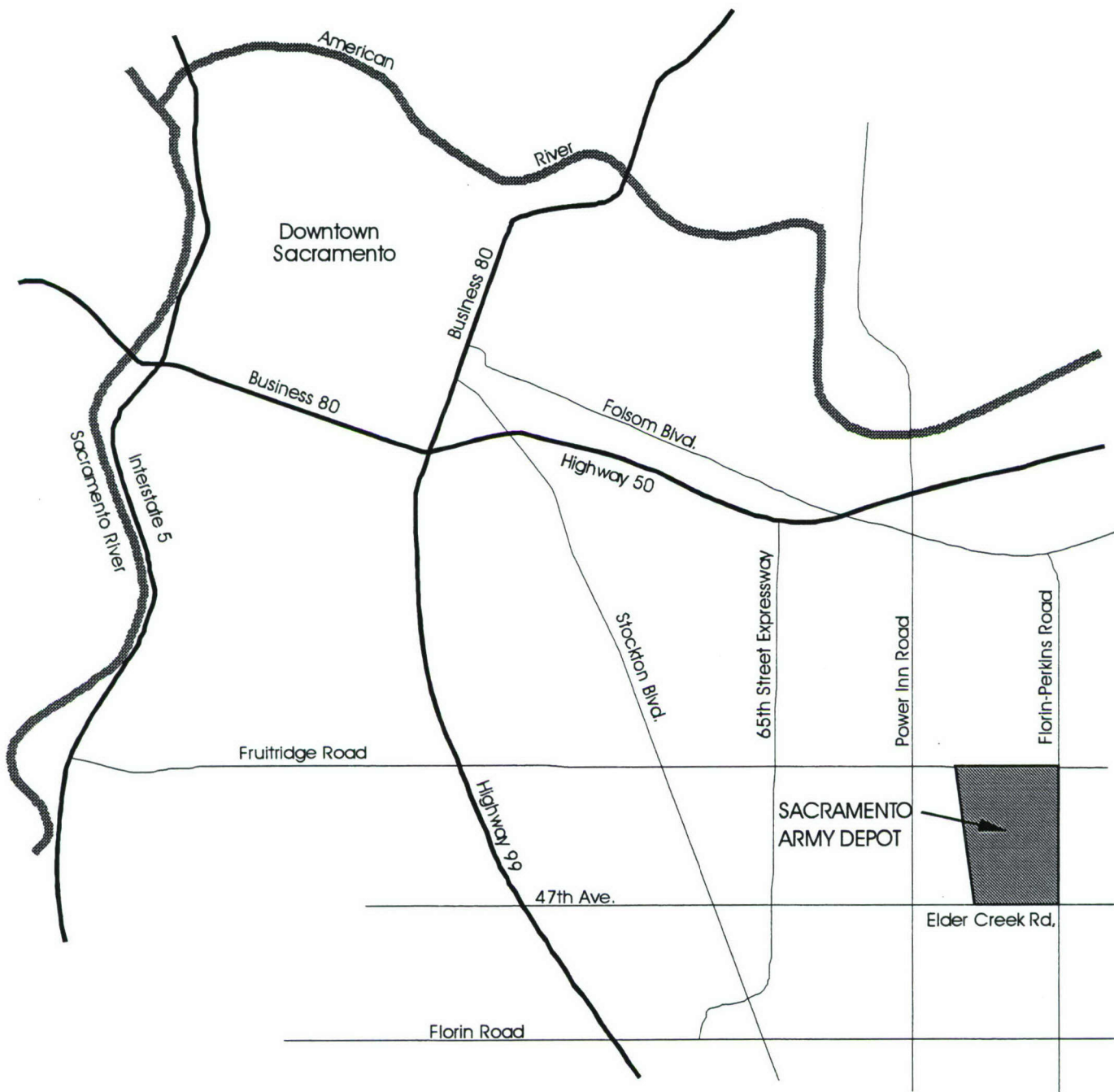


FIGURE 1-3

LOCATION MAP

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

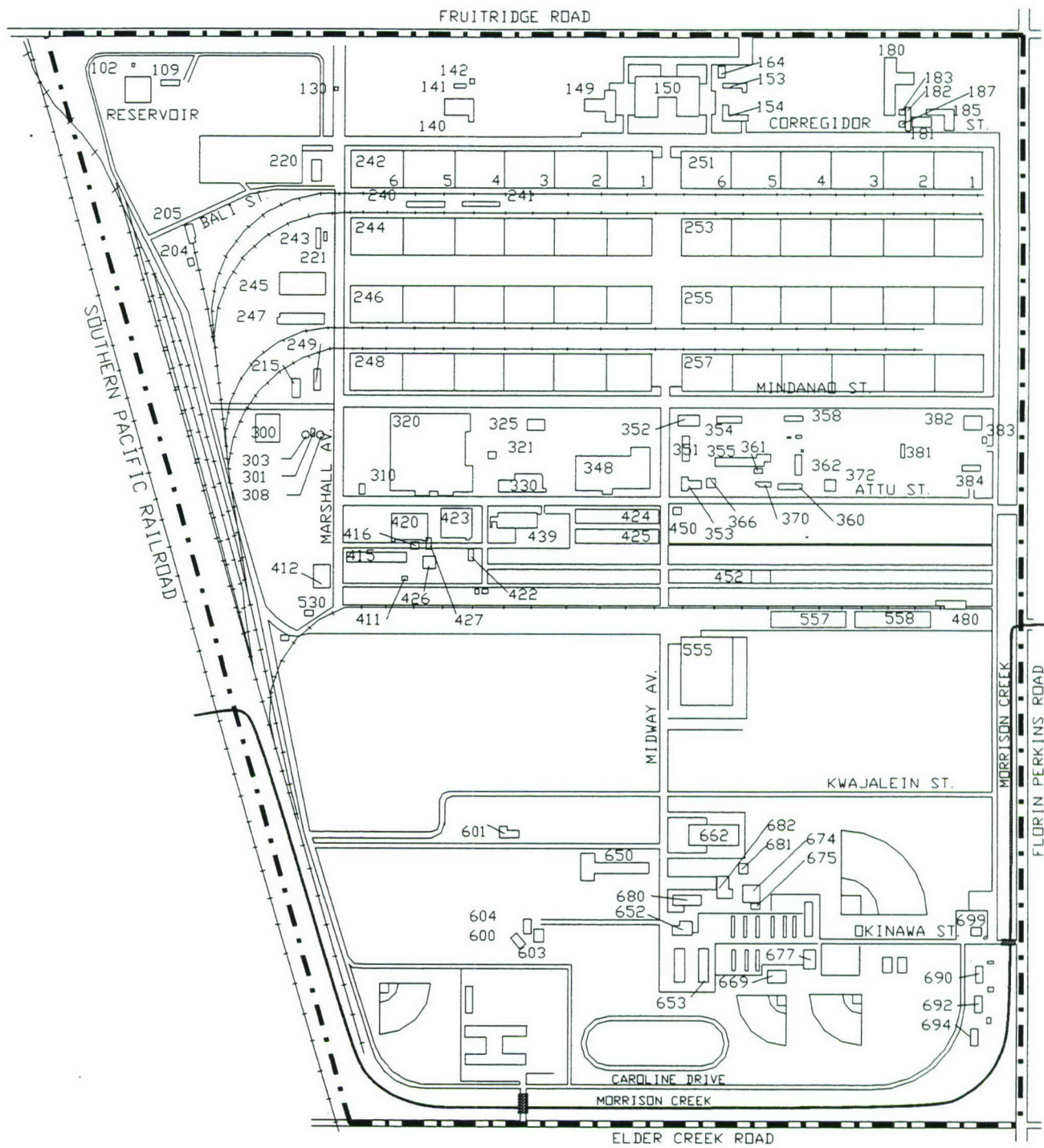


FIGURE 1-4

SITE MAP

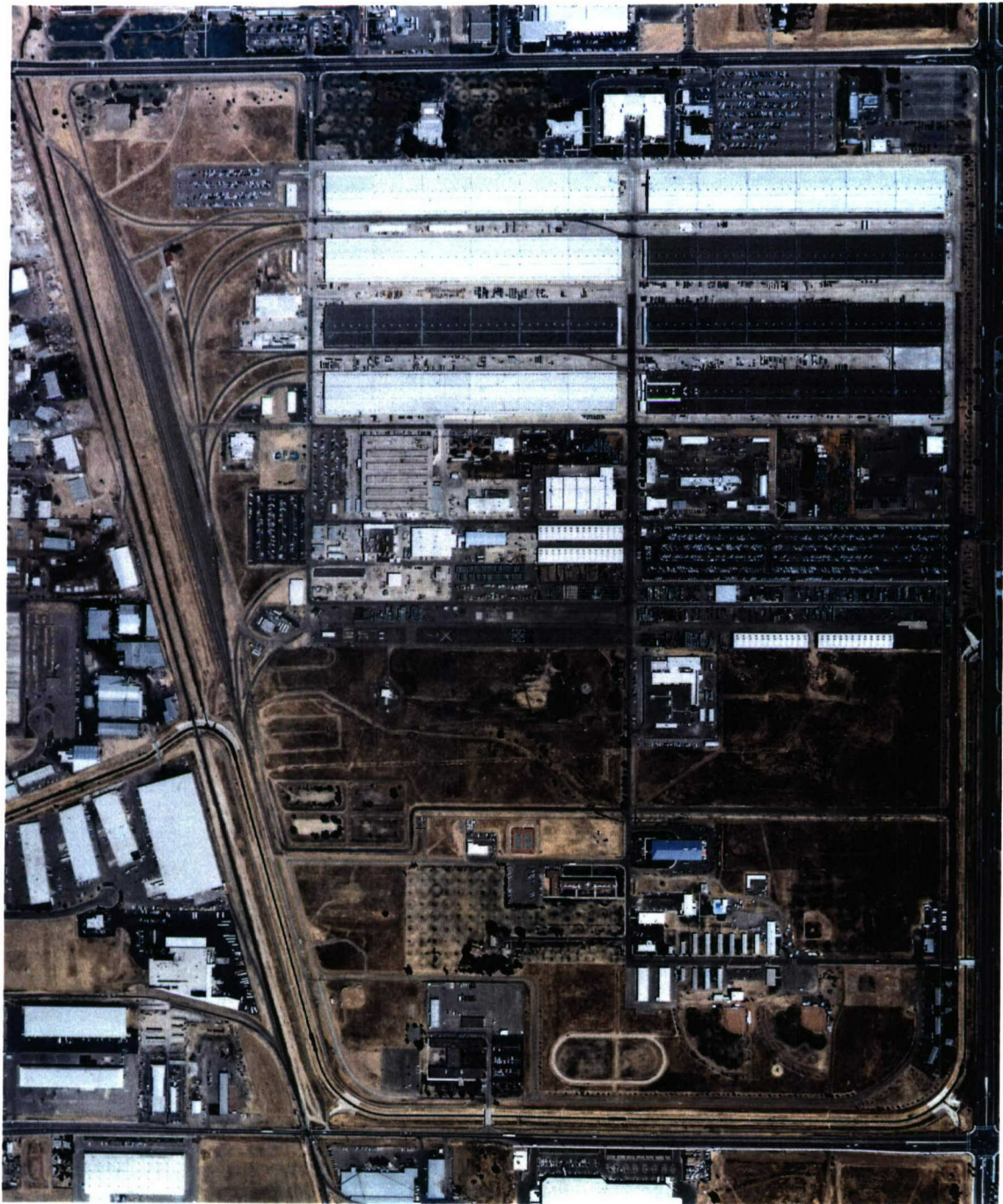
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

LEGEND

600 FACILITY NUMBER

--- SAAD PROPERTY BOUNDARY



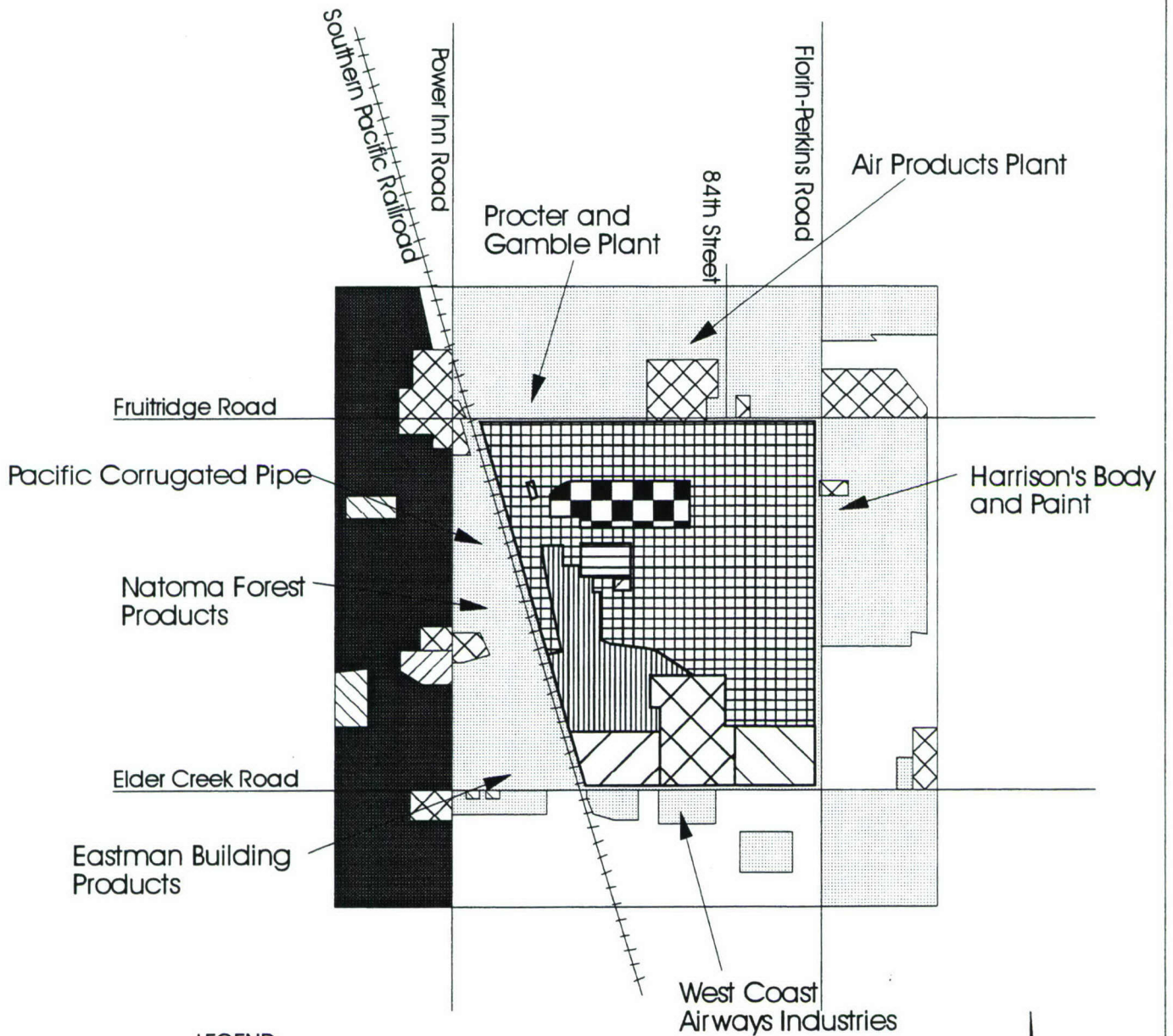


SCALE: 1" = 2,000'

FIGURE 1-5

AERIAL PHOTOGRAPH OF THE
SACRAMENTO ARMY DEPOT

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

	Industrial		City of Sacramento
	Commercial		California Emergency Foodlink, Inc.
	Homes		California State University, Sacramento
	School		Navy/Marine Corps Training Center
	Park		U.S. Army Reserve
	Vacant		California Army National Guard
			For transfer to the City of Sacramento when cleanup is complete



SCALE

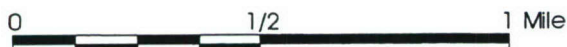
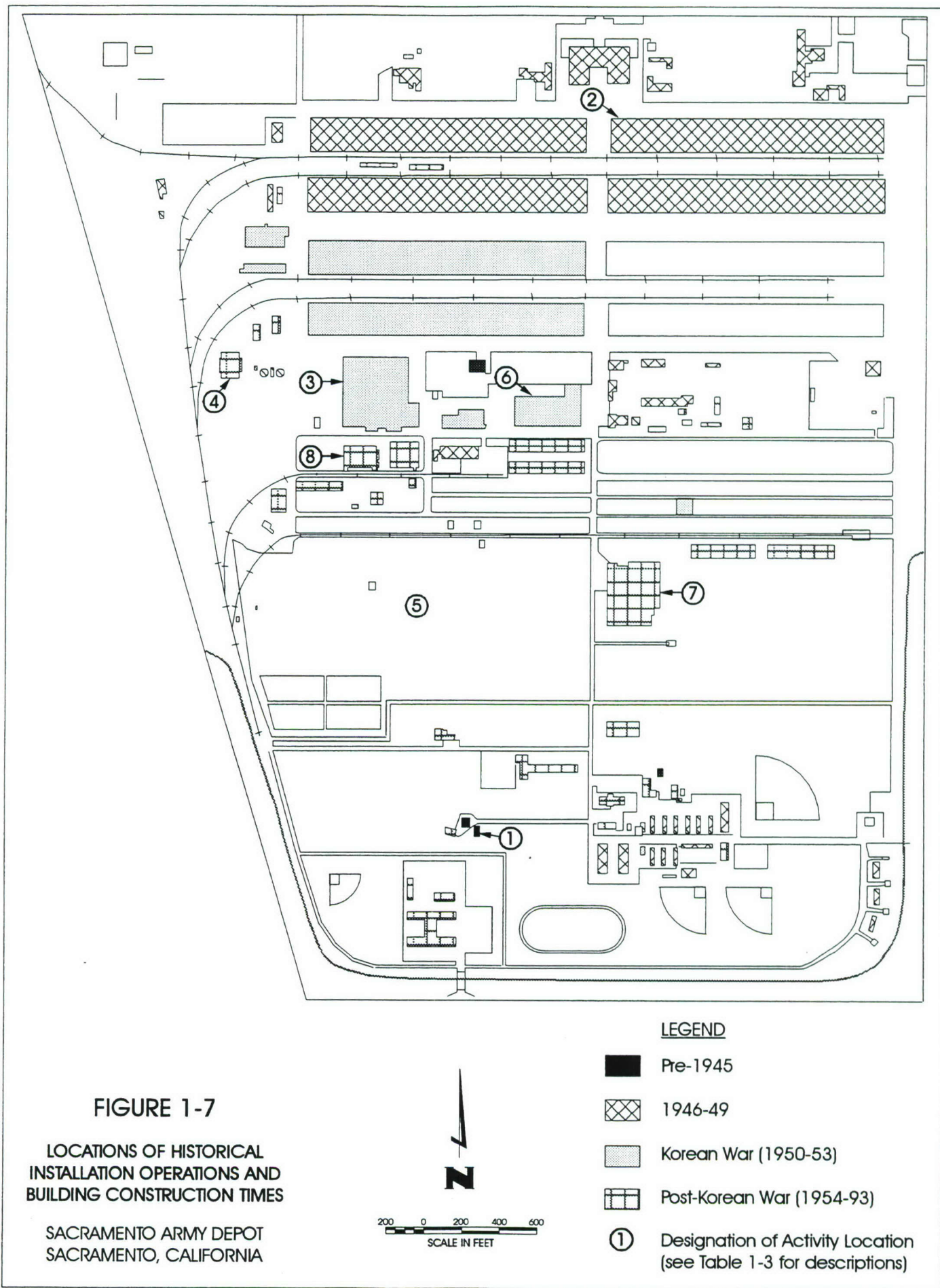
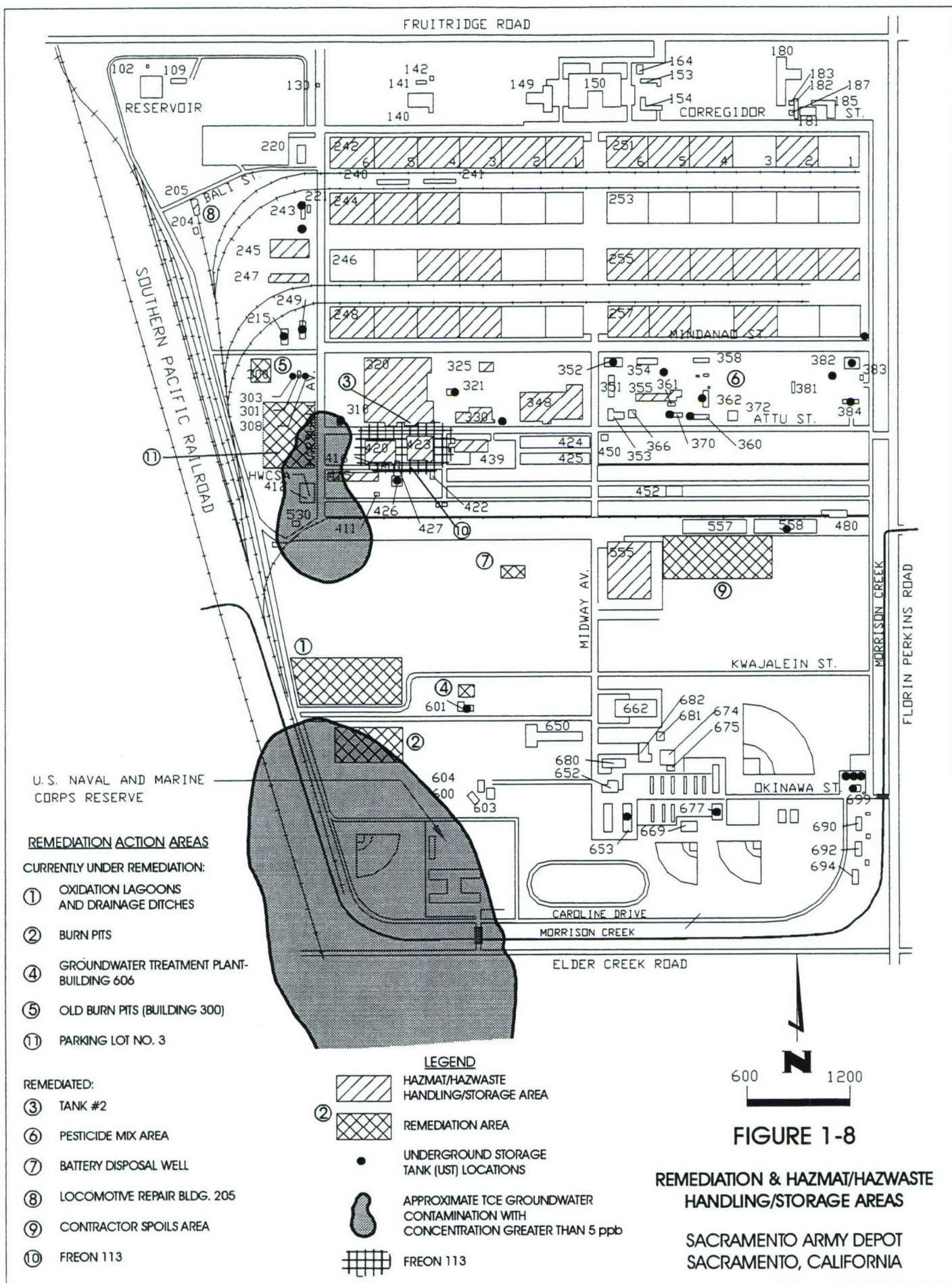


FIGURE 1-6

**SURROUNDING LAND USES
AND SADA REUSE**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**





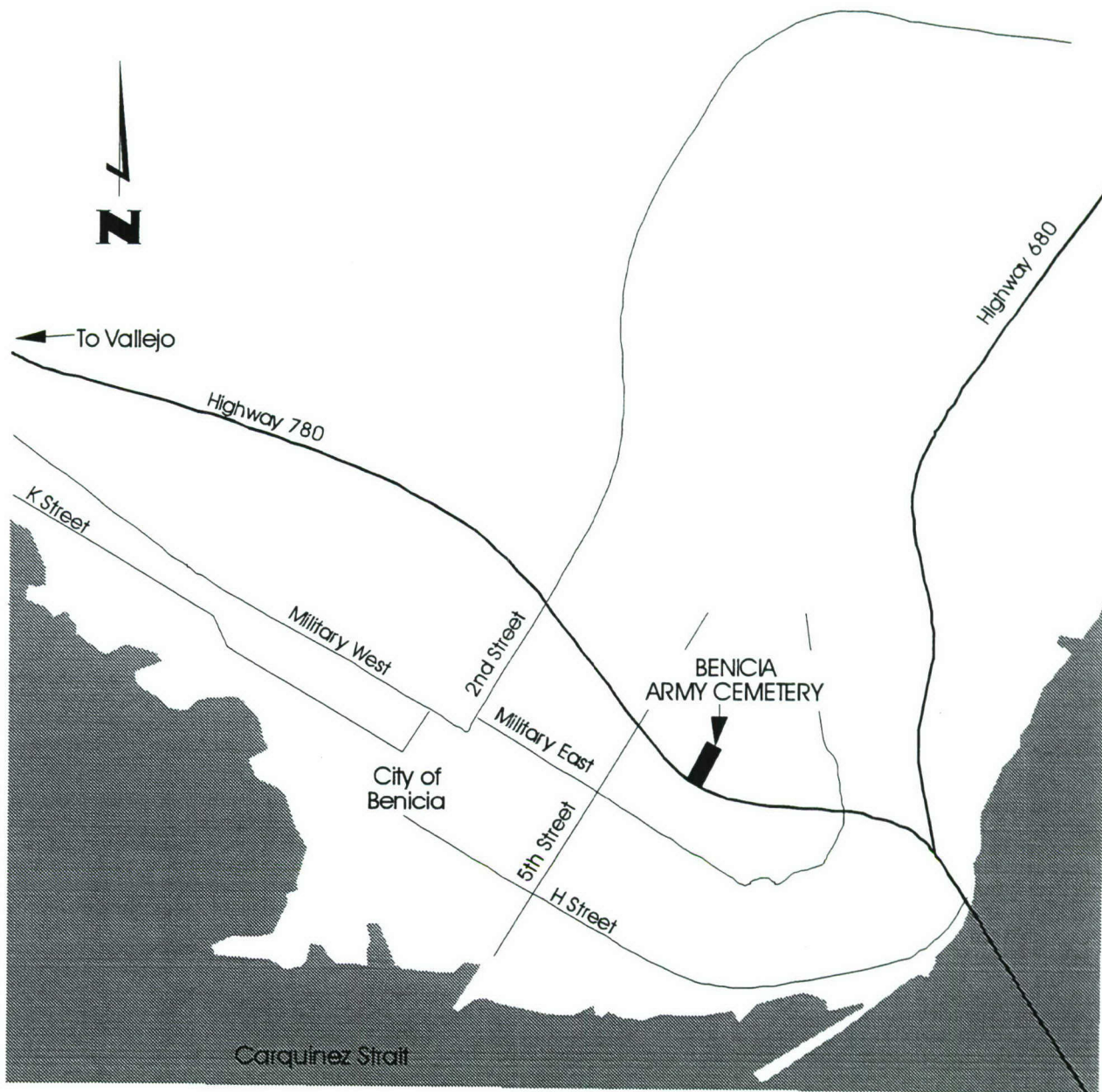
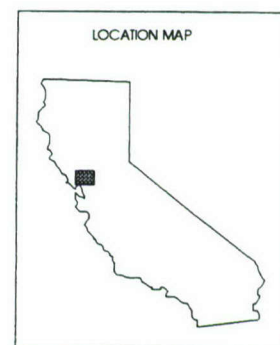


FIGURE 1-9

**LOCATION OF
BENICIA ARMY CEMETERY**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**



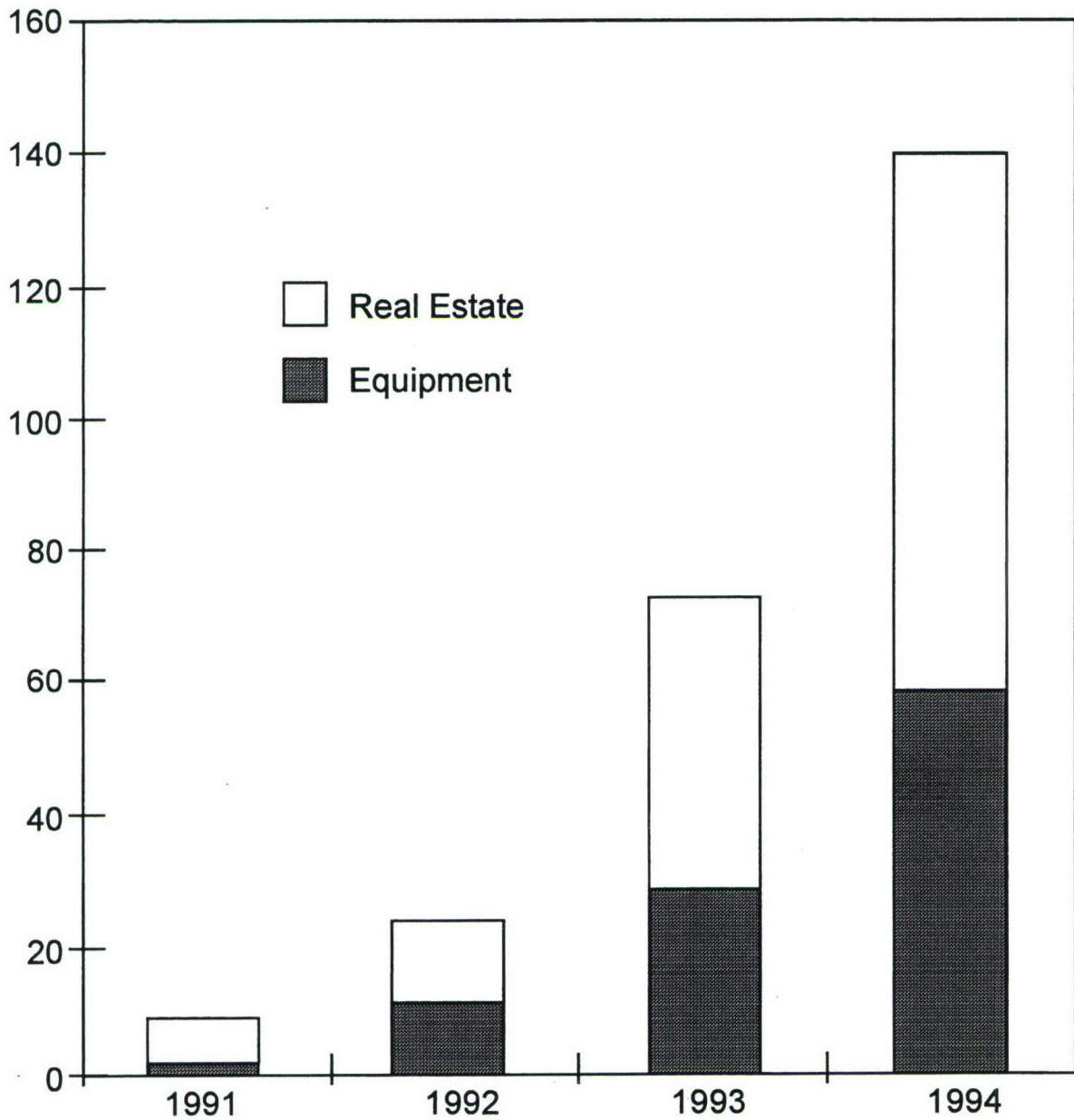


FIGURE 1-10
REUSE INQUIRIES
(BY CALENDAR YEAR FROM
JULY 1991 TO NOVEMBER 1994)
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

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Chapter 2

Property Disposal and Reuse Plan

BRAC 91 legislation, Public Law 101-510, required the Secretary of Defense to dispose of excess property in accordance with the Federal Property and Administrative Services Act of 1949, as amended; Federal Property Management Regulations (FPMRs); and DoD and Army policies. Public Law 101-510 directs that the Depot be closed no later than July 1997. However, on March 3, 1995, **the Sacramento Army Depot was the first BRAC installation to transfer the majority of the installation and have that property successfully reused by the private sector.** This section describes the disposal process, the community's role in the successful reuse of the installation, and the property transfer results.

The Army conducted regular meetings with representatives of the City of Sacramento's Planning Department and the City's Reuse Commission beginning in September 1991 to facilitate property disposal and reuse. The Reuse Commission completed its Reuse Plan in June 1994. The plan was subsequently approved by the City in November 1994. The City's efforts attracted Packard Bell Corporation to establish its world headquarters at the site by providing over \$26 million in loan guarantees for its relocation and site improvements.

On March 3, 1995, the Army transferred 306 acres to the City of Sacramento, which leased the majority of the site to Packard Bell Corporation. About 65 acres of land is not yet suitable for transfer to the City. The Army is in the process of remediating the area and expects to transfer this portion of the Depot to the City in phases by 1996. Assignment of approximately 28 acres to HHS is pending; as is the assignment of approximately 8 acres to the U.S. Department of Education. The Army retained about 62 acres as its Reserve Enclave. The Army has also transferred about 19 acres to the Navy for the Navy/Marine Corps Reserve Training Center. The processes and timeline associated with disposal and reuse are presented in Figure 2-1.

2.1

Status of Disposal Planning Process

The disposal of the Depot involves many interrelated activities: NEPA EIS process, the development of a community Reuse Plan, the EBSs, and the real estate disposal process. These activities are discussed in this section.

2.1.1

NEPA Process

2.1.1.1

Overall Process

The Draft and Final Disposal and Reuse EISs were issued for public review on January 28 and November 9, 1994, respectively. The EIS ROD was signed on January 13, 1995. As described

above, the community Reuse Plan has also been completed and approved. Community involvement in the EIS process is described in Section 3.5.1.

The EIS process initially focused on the impacts of disposal and reuse. The process began on December 30, 1992, with publication in the Federal Register of the Notice of Intent to prepare the EIS. An advertised scoping meeting to solicit comments from the public was held on January 28, 1993, in downtown Sacramento. There were no comments from the public or agencies at the scoping meeting, perhaps because the Depot was being aggressively cleaned up under the IRP and the decision had already been made to close the Depot. Another possible reason for the lack of public interest may have been that preparation of an EIS was begun for the closure of the Depot when it first appeared on the BRAC II closure list. When BRAC II was withdrawn and the Depot reemerged on the BRAC 91 list, the public may have accepted its closure and realized efforts to delay closure through the NEPA process would not be effective. Only written comments from government agencies were received by the time the comment period closed on February 8, 1993.

The Draft EIS was released for public review in January 1994, one year after the scoping meeting. The Draft EIS included descriptions and analyses of five reuse alternatives prepared in conjunction with City staff. Land use areas and employment projections for each alternative considered in the Draft EIS are summarized in Table 2-1. These alternative specifications were developed several months in advance of the City's Reuse Plan in order to stay on schedule and facilitate transfer and reuse in 1995.

The major concern with development of the alternatives was that they spanned a sufficient range so that the preferred alternative, which was to be based on the Reuse Plan, would be within the range of alternatives submitted for public review and comment in the Draft EIS. This required that the four alternatives be chosen to include initial goals of the City of Sacramento, as well as bound the range of reasonable outcomes. The City's initial plans were too grandiose. It envisioned reuse that included the entire 487 acres and about 12,000 to 19,000 employees. (Baseline employment under the Army was about 3,100 employees). Later, that acreage had to be reduced to a range of 28 to 406 acres to accommodate proposed transfers to various DoD entities and public benefit conveyance requests that resulted from the screening process. The employment range used in the Draft EIS was eventually expanded and lowered to about 1,000 to 15,000 people to accommodate a wider range of alternatives and bound the likely employment level of the City's Reuse Plan. In the fifth, or no action alternative, the Army envisioned a caretaker force of about 170 people and no reuse by the City.

The Draft EIS analysis identified as key issues traffic, air quality, and biological resources. Air quality became a constraint on the employment size for the Depot since Sacramento is in a non-attainment area. Exceeding 6,000 employees was predicted to cause mobile emissions that would lead to violations of the federal Clean Air Act. This meant that the higher intensity reuse alternatives initially proposed by the Reuse Commission would be unacceptable. Key biological resources included the burrowing owl, a state sensitive species, and the potential federal listing of the fairy shrimp, California linderiella, as threatened or endangered. Mitigation for biological resources included consultation with the responsible agency prior to developing areas with potential habitat. Hazardous waste concerns were also important, and mitigation in the Draft EIS

included a deed restriction over the South Post Burn Pits site where soil stabilization was to be used. No preferred alternative was chosen in the Draft EIS. The Army's policy was to use the community's Reuse Plan as the preferred alternative. Consequently, the Draft EIS was released in January 1994, but preparation of the Final EIS was delayed pending the City of Sacramento's preparation of the Reuse Plan, which was not finalized until June 1994.

A summary of the Reuse Plan was developed by City staff and submitted as a comment to the Draft EIS. The City plan, with minor modifications, became the Army's Preferred Alternative (Alternative 1R) for the Final EIS (see Table 2-1 and Figure 2-2). The City Reuse Plan included 6,000 employees on the Depot site and area designated Open Space to protect burrowing owl and fairy shrimp habitat. The open space area was sized such that the average density of the remaining usable parcel was about 22 employees per net acre. A net acre (or developable area) was assumed to be 85 percent of the gross acreage.

After the Draft EIS had been released, the U.S. Department of Agriculture Forest Service withdrew its interest in the northern part of the Depot and its designated area was removed from Alternatives 1 through 3 in the Final EIS. The name of Alternative 4 was also changed from Public Sector to Office/Administrative. Public comments on the Draft EIS were incorporated into the Final EIS.

The Preferred Alternative in the Final EIS (based on the Reuse Plan) was shaped by air quality constraints and biological resources. The air quality constraint limited the Preferred Alternative to 6,000 employees and the City of Sacramento staff agreed to revise the Reuse Plan to conform to that maximum. Also, during the period between the release of the Draft EIS and preparation of the Final EIS, a second fairy shrimp species being considered for federal listing as threatened or endangered was discovered on the Depot. To facilitate the conclusion of the EIS process, mitigation conditions were developed to accommodate the possibility of listing either species, regardless of the listing outcome. However, the listing decision was made just before the Final EIS was released, and only the vernal pool fairy shrimp (*Branchinecta lynchi*) was listed as threatened. Consequently, the mitigation requirement was changed from only consultation with the U.S. Fish and Wildlife Service to implementation measures developed through consultation and the recording of a conservation easement to protect a pool outside the City-designated Open Space area that contained the listed vernal pool fairy shrimp. A Biological Assessment was also prepared to seek concurrence from the U.S. Fish and Wildlife Service that disposal and reuse of the Depot would not jeopardize the continued existence of this vernal pool fairy shrimp.

The present reuse of the Depot site involves 422 of the 487 total acres and about 3,800 employees. This current level of employment exceeds the 3,082 employees at the Depot in 1991, the year of the closure decision. The employment breakdown and actual reuse areas are presented in Table 2-1 and Figure 2-3, respectively.

2.1.1.2

NEPA, Reuse Planning, and Environmental Justice Issues

Environmental justice means that no segment of the population should bear a disproportionate share of adverse human health or environmental effects of a proposed action. To achieve this end, Executive Order 12898, issued in February 11, 1994, requires DoD and other agencies to identify and address "... disproportionately high and adverse human health and environmental effects on minority and low-income populations." This section describes how environmental justice issues were addressed during development of the EIS. A stand alone discussion of these issues and how they were addressed is provided in Appendix F along with local population maps.

Potential human health and environmental effects on everyone in the immediate and regional areas around the Depot were addressed in the public involvement process for the disposal and reuse EIS. In this process, input from the public and from the government was openly and repeatedly solicited.

Input from all segments of the public on any related issue was solicited in scoping the EIS and in reviewing the Draft and Final EISs. Several outreach actions were taken for the scoping process. The Notice of Intent to prepare the EIS was published in the Federal Register on December 30, 1992. Invitations to the scoping meeting were sent to all addresses within a 500-foot area around the Depot. The scoping process also included public notices in two local newspapers on January 17 and 27, 1993; press releases sent to 80 members of the news media; and announcements sent to public agencies, public interest groups, and individuals thought or known to be interested in the disposal or reuse of the Depot. Also, over 200 notices were sent to local, state and federal legislative bodies announcing the scoping meeting and inviting comment. The scoping meeting was held at the Sacramento Convention Center during the evening of January 28, 1993, and all comments were recorded. Written comments were received during a 40-day period ending February 8, 1993. The scoping report was made available at four public information repositories; the George Sim Community Center, Sacramento Central Public Library, the California State University at Sacramento library, and the Depot Visitor Control Building.

Comments on the Draft EIS were solicited from all segments of the Sacramento population. The Draft EIS was released for public review and comment in January 1994, with copies made available at the repositories. A public workshop on the Draft EIS was advertised in advance in the local newspaper, the Sacramento Bee, and held as scheduled in the local area at the George Sim Community Center. The comment period extended until March 21, 1994, and comments on the Draft EIS were addressed.

Comments on the Final EIS were solicited with announcements of its availability at the public information repositories. Announcements were published in the Sacramento Bee on November 9 and 16, 1994. The comment period extended to December 12, 1994. There were no comments that the Final EIS was inadequate.

2.1.2

Community Reuse Plan

Soon after being listed as a BRAC 91 installation, the City of Sacramento formed the Sacramento Army Depot Reuse Commission. The Commission's formation and role are described in more detail in Section 2.2.

Environmental justice concerns were addressed as minority and low income populations in the Depot vicinity had several opportunities to be involved with the activity of the Sacramento Army Depot Reuse Commission. The Reuse Commission included representatives from the local community, and several public meetings were held to receive input from the community in developing the City's Reuse Plan.

The Reuse Commission completed its Community Reuse Plan in June 1994, with support from the Army. The plan was approved by the City Council in November 1994. That plan served as the basis for the preferred alternative for the Army's Disposal and Reuse EIS. The plan is discussed in more detail below in Section 2.2.3, along with other aspects of the community role in disposal and reuse.

2.1.3

Disposal Plan

In preparation for property transfer, the ACOE Real Estate Division prepared a disposal plan addressing interim leasing, compliance with the McKinney Act, and transfer to DoD components and federal agencies known at that time. Upon completion of the City of Sacramento's Draft Reuse Plan, the Real Estate Division had sufficient information to complete its Disposal Plan in April 1994, and updated it a year later in April 1995. Details of property transfer are described in Section 2.5.

Environmental justice concerns were addressed during the disposal of the Depot property, with several beneficial results. Depot property for which DoD and other federal entities had no requirement was screened by HHS specifically for low-income populations, i.e., the homeless, pursuant to the Stewart B. McKinney Homeless Assistance Act.

State and local screening resulted in opportunities for minorities. Property for which no homeless assistance requirement was identified was screened for interest by state and local government entities (public agencies) for public benefit discount or negotiated sale. These entities can obtain property at less than fair market value for uses that would benefit the public, such as public health and education when sponsored by a federal agency. Eight acres of the Depot are approved for transfer to CSUS under a public benefit discount conveyance. The City has leased 306 acres to Packard Bell with a stipulation that Packard Bell hire minority subcontractors for at least 10 percent of its construction activity. Furthermore, Packard Bell has hired hundreds of people who were on social programs, such as Aid to Families with Dependent Children, in order to secure tax credits.

2.1.4

Community Environmental Response Facilitation Act (CERFA)

In October 1992, Public Law 102-426, the Community Environmental Response Facilitation Act (CERFA) amended Section 120(h) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and established new procedures for transferring and leasing real property. These procedures retroactively affected the BRAC I and BRAC 91 installations.

The intent of this legislation was to mitigate the adverse effect on communities from closing a military installation by facilitating the quick release of clean real property, making it immediately available for redevelopment and reuse. The act required military installations to identify real property where no CERCLA-regulated hazardous substances or petroleum products were stored for one year or more, released, or disposed of. Property that met these conditions was determined to be a "CERFA parcel" and was available for disposal and reuse (although there was no requirement to actually dispose of such property). The Army also included in its determination of a CERFA parcel those areas that once contained non-CERCLA hazards (including asbestos, unexploded ordnance (UXO), lead-based paint, and radionuclides), but had since been fully remediated.

By the time the CERFA legislation was passed, the EBS process was underway. Accordingly, the Depot requested the opportunity to prepare the CERFA analysis themselves, since it follows the same process as the EBS. However, the Army Environmental Center (AEC) was responsible for preparing the CERFA Study for the Army and decided to send the work to its contractor to maintain uniformity and consistency. At first this action was viewed as an unnecessary duplication of effort by Depot staff. However, the Depot was able to persuade AEC's contractor to use the EBS Study Areas to ensure consistency with the Depot's ongoing EBS studies. In retrospect, this worked as a positive benefit for both parties in understanding the true closure requirements and possible problems early on. As discussed further in Section 3.4, the CERFA study identified seven study areas as being CERFA parcels suitable for immediate transfer.

2.1.5

EBS Status

At the outset of the BRAC process, the Depot was not sure how the property would be reused. A high demand for the site was not readily apparent so leasing was determined to be a key reuse strategy. To facilitate interim leasing and allow the market to readily select parcels for acquisition, the Depot (excluding the Reserve Enclave) was divided into 98 study areas (see Figure 2-4). Each of these EBS study areas represents a recognizable and complete facility, building, building group or complex, parking lot, or open land area. Each study area that encompasses one or more facilities or buildings includes the parking, landscaping, and appurtenances associated with them. Previously identified remediation areas, such as the Oxidation Lagoons and the South Post Burn Pits, were defined as separate EBS study areas.

A comprehensive site-specific EBS report was prepared for each study area. This modular approach facilitated disposal of the installation on several levels. It:

- Allowed interested lessors and buyers to select the area(s) of interest and made it easy to match the parcel to the EBS study area(s)
- Focused regulatory review on the issues specific to an EBS study area
- Simplified the process of dealing with new findings and agency comments
- Made the CERFA and EBS analyses immediately compatible, eliminating unnecessary duplication of effort on the part of regulators and other reviewers
- Facilitated the exchange of information between the environmental and closure contractors by identifying the remediation and investigation areas as unique study areas
- Satisfied California disclosure requirements
- Gave SADA the flexibility to immediately change focus to parcels of reuse interest for quick disposal

It was originally conceived that the EBS documentation for each study area would be contained in a separate binder. As additional work was completed, the respective binder would be updated with the current data and status. This system would provide flexibility to update the report as additional data were developed. In the event of a transfer of facilities, the binder(s) for the facilities of interest would merely need to be copied and attached to a standardized FOST or FOSL. In reality, the disposal happened so quickly that preparation of the EBS reports was fast-tracked with most of them being finalized prior to the March 3, 1995 transfer. Only those areas under remediation will require updating once the remediation is completed.

The EBS findings were made a part of the Basewide ROD. Regular technical group meetings were held. Included were environmental and closure staff, as well as ACOE, Depot, California and federal regulators, and City of Sacramento representatives. This integration of the EBS process with remedial and planning activities resulted in expedited No Further Action site development and set the stage for the accelerated approvals that were required. **The Basewide ROD acted not only as the agency approval of the CERCLA process, but also as the agencies' approval of the property condition transfer process.**

Each EBS report followed the same report outline and survey process. Following DoD guidance and with input from the ACOE and Depot staff, key report components were designed to be common to the land areas and buildings. Since no model for an EBS existed at the onset of this effort, the regulatory agencies were made an integral part of the development process. The agency concurrence with the report outline and survey process resulted in reproducible, consistent, and familiar EBS reports and unprecedented speed of agency comments and approvals. Issues unique to a building or land area were quickly and easily recognized and resolved. This cooperation served as the foundation for successful fast-track property transfer.

To investigate past uses of the Depot facilities, a detailed examination of federal government documents, records, and studies was conducted. Permits and other regulatory agency records were reviewed. Former and current Depot and contractor employees were interviewed. Visual inspections to identify signs of possible contamination were conducted of all buildings and grounds. The project team used maps, aerial photos, and as-built drawings to identify each study area and chart each known or suspected area of contamination. If sampling was indicated, a site-specific sampling plan was developed, the sampling performed, and recommendations for further study or decontamination, cleanup and confirmatory sampling recommended. Based on plans developed as part of the EBS process, the Depot cleanup crews conducted numerous building decontamination and cleanup activities, including building floors and walls, sumps, ductwork, and surrounding soils.

The EBS report preparation, review, and approval process, although exceptionally flexible, was based on the following review process:

- Internal Draft Preparation
- Internal Draft Review and Approval
- Depot and ACOE Draft Review and Approval
- Additional Studies, Decontamination and Cleanup
- Regulatory Draft Review and Approval
- Depot and ACOE Draft Final Review and Approval
- Regulatory Draft Final Review and Approval
- Final EBS Report

To maximize report coordination, several study areas were initially grouped together into 10 groups. Table 2-2 identifies the investigation group, EBS study areas assigned to that group and presents the initial schedule for completing the EBS documents. Since the City of Sacramento's reuse process was not yet finalized, and no firm private sector interest was identified, priority of the work was originally based on the anticipated date that the buildings and facilities would be vacated (Table 2-3) and Depot use ended. A critical element of this schedule was the need to interview staff while they could readily be contacted. Once staff left the Depot (i.e., entered private employment, retired or transferred to other facilities) they were often unreachable.

As interest in interim reuse materialized, priority shifted to those study areas of interest. FOSLs, licenses and lease agreements had to be prepared in time to meet private industry's critical schedules, requiring that the subject EBS reports be completed on an accelerated schedule. The structure of multiple study areas allowed EBS documents to be prepared rapidly for site-specific areas of the installation. These EBSs were used as part of the documentation that was required for interim leasing (see Section 2.4).

The work schedule was in an almost continual state of change to respond to the property transfer demands, previously unknown sampling needs, decontamination and cleanup activities, Depot workforce relocations and reductions, and regulatory requirements. In all, more than 20 formal schedule revisions were developed and implemented.

The City of Sacramento property transfer on March 3, 1995, proved the pivotal test of the process. Dozens of EBS reports were reviewed, approved and finalized in a matter of days. Although all participants and reviewers performed admirably, **special recognition is due for the regulatory agency staff**. From the office of the Governor to Cal/EPA and USEPA, the state and federal regulatory personnel, acted with a sense of urgency and unity of purpose that overcame traditional bureaucratic barriers and accelerated the momentum in the review and approval processes.

2.1.6

Radiation Clearance

Early in the BRAC process, the Depot Environmental staff requested funding to perform a radiation survey. At that time, the Depot was informed that radiation surveys were not the responsibility of the environmental program, and others would perform this task. The Depot safety office (contracted from DDRW) began to formulate a plan to screen only those areas that had been part of the Depot's NRC license to repair night vision devices containing radioactive thorium coatings. Late in the process, the Depot Commander was informed by higher headquarters that to obtain radioactive clearance of all buildings before facilities could be transferred, a much more extensive survey would be required since components containing radioactive materials, albeit low-level, had been stored in or passed through several buildings. After discussions with the U.S. Army Center for Health Promotion and Preventive Medicine (provisional) (CHPPM), it was determined that historical research would be performed and buildings without any history of radioactive material storage or use would be eliminated. Inspection reports, interviews with former Depot employees familiar with safety requirements, and archived NRC records were all used in this historical review.

Oversight of the radiation survey program was done by the Depot Commander and the environmental staff. Storage, shipping, receiving, and manufacturing areas using low-level radioactive materials were identified in numerous buildings at the Depot. Surveys for the presence of radiation were conducted by the Depot's Radiological Protection Office, CHPPM, and the closure contractor. More than 30,000 grid points were tested, and detailed investigations conducted at the suspect locations. An extensive radiological survey database was developed to manage the massive amount of data.

The magnitude of this effort was staggering. In addition, its commencement was late in the process, placing it on the critical path. The Depot's environmental contractor, Foster Wheeler Environmental, provided critical support to CHPPM, supplying database support, entering lab data into tables, developing an extensive database and often turning around reports in just a few days.

As it turned out, **radiation clearance was the final hurdle to transferring the Depot to the City of Sacramento**. To meet the transfer deadline, CHPPM met with Cal/EPA staff to review the raw data and obtain clearance. A final issue developed when it was discovered that certain laboratory samples were run in Denver, which has a higher background radiation level than Sacramento. Cal/EPA was concerned about the effect of this difference on test results. Based on

this concern, samples from Denver were rerun at another laboratory with a lower background radiation level. The Depot Commander then set up unprecedented weekend review meetings with CHPPM, NRC and Cal/EPA to speed up the review and approval process and meet the transfer schedule.

California state and NRC regulators, after thorough review of the data and a dedicated effort, concluded that radiation at the Depot is at or below background levels and, therefore, does not pose a threat to human health or the environment.

2.2

Community Role in Disposal and Reuse

This section briefly describes the key role played by the community in formulating a Reuse Plan and attracting Packard Bell as the major tenant for the Depot site. **Without city and state involvement, Packard Bell would not have relocated its corporate headquarters to the Depot facility.**

2.2.1

Formation of the Sacramento Army Depot Reuse Commission

The City of Sacramento played a key role in the reuse of the Depot. On April 21, 1992, the City Council, by resolution, created the Sacramento Army Depot Reuse Commission. The commission was comprised of 13 members of the City Council and community leaders with ex-officio members from the ACOE and Depot leaders. The Commission's mission was to produce a Reuse Plan that would increase economic employment opportunities consistent with land-use zoning for interim and long-term use. The resolution creating the Reuse Commission outlined the following primary goals for the Reuse Plan:

- To diversify the Sacramento economy
- To facilitate employment of displaced Depot employees
- To provide employment opportunities for Sacramento residents
- To provide jobs that increase income levels for Sacramentans
- To strengthen the local tax base for Sacramento
- To determine the highest and best land use to serve the highest overall return

Additionally, the resolution specified the following secondary goals:

- To create a multipurpose plan, including public uses, that will attract high quality enterprises
- To create a quality environment with compatible uses
- To be compatible with land uses in the surrounding area

- To maximize the ability to support infrastructure and operational costs

The Closure Commission met monthly since its inception to develop the Reuse Plan and related materials. It received a \$141,000 grant from the DoD that was used to fund four studies: traffic and circulation, infrastructure, financing, and California Environmental Quality Act (CEQA) compliance.

2.2.2

Marketing Brochure

Originally, the Reuse Commission did not believe there was going to be a strong market for the Depot facilities. It applied to the Office of Economic Adjustment and received \$10,000 in funds to prepare a marketing brochure. This brochure was prepared by the City of Sacramento's Economic Development staff. However, due to a lack of additional funding, the brochure was never printed. As fate would have it, a single user—Packard Bell—became interested in the site and the brochure was not necessary.

2.2.3

Community Reuse Plan

The City of Sacramento staff, under the direction of the Reuse Commission, began preparing the Reuse Plan. The Reuse Plan was approved by the Reuse Commission in June 1994 and was adopted by the City Council in November 1994. It included the following elements:

- **Reuse Vision:** This chapter summarized the April 1992 Sacramento City Council resolution that chartered the Sacramento Army Depot Reuse Commission, defined its mission statement, and established its primary and secondary goals.
- **Opportunities and Constraints:** This chapter identified the various development opportunities offered by closure of the Depot, along with constraints to redevelopment of the site.
- **Market Analysis:** This chapter provided a general overview of the Sacramento region along with an in-depth look at the Power Inn/Florin Perkins Industrial Area, which surrounds the Depot.
- **Marketing Strategy:** This chapter identified industries that were to be targeted for the Depot site, the competitive advantages that may be emphasized in attracting these industries along with competitive disadvantages of the site, and a discussion of lease sale terms and other incentives needed to attract targeted users.
- **Building Evaluation/Demolition:** This chapter discussed the general condition of the Depot's 72 permanent buildings, degree of code compliance, and recommendations for demolition or retention.
- **Public Conveyance:** This chapter focused on the results of the federal, McKinney Act and Public Benefit Conveyance requests. These requests provided several challenges for

the City of Sacramento. Generally, they were for the prime marketable areas of the Depot. In addition, the requested locations overlapped and generally left scattered land holdings making marketing of the remaining areas more difficult. Therefore, this section provided principles to be used by the Reuse Commission in recommending its support or non-support of public benefit conveyance requests.

- **Preferred Land Use Plan:** This chapter presented development standards and design guidelines to be used as a framework for redevelopment of the site. The Land Use Plan converted 352 gross acres of developable area into an attractive light industrial park with approximately 3 million square feet of both new and existing building area.
- **Development Plan:** This chapter provided a comprehensive development plan for the Depot. It provided information on phasing, financing, infrastructure, and methods to subdivide the site into multiple parcels. It also provided specific recommendations on a preferred development plan and provided financial projections to identify the impacts of changing the recommended plan.

The recommended plan required public participation of \$8.6 million to support demolition of obsolete structures and replacement of sub-standard infrastructure. It recommended that a redevelopment area be established at the Depot to contribute \$3.6 million, and that \$5.0 million be requested in federal grants to provide the balance of the funding.

In late 1993, the City of Sacramento suffered a major setback in developing its Reuse Plan when results of state and local screening (Figure 2-6) showed that numerous requests for no-cost public benefit conveyance of portions of the Depot property had been approved by federal sponsors. If implemented, the City felt that these conveyances could seriously impact the ability to develop the remaining property, since remaining parcels would be piecemeal and infrastructure improvement costs would be disproportionately borne by the privately developed parcels. This forced the Reuse Commission members to reconsider their plan in light of the potential for significant public use of the property in lieu of private development for jobs and tax base. The Reuse Plan was modified to reflect criteria the City would use to evaluate potential public uses of portions of the Depot.

Initially the Reuse Plan included a federal screening request by the U.S. Forest Service for a major portion of the northern frontage of the property, and a large parcel on the eastern frontage for development of a new corrections facility by the California Department of Corrections, claimed in state and local screening. The Forest Service parcel was viewed as having significant impact on development of the rest of the site since it effectively closed off most of the northern access. However, the planned use was for a regional headquarters that would bring several hundred jobs to the area, and no other buildings on the site would accommodate the planned use. When the BRAC 93 list was announced, the Forest Service was directed by its headquarters to look at potential sites that would now be available in the San Francisco Bay area, which was closer to the current regional headquarters in San Francisco. An appropriate alternate site was found, and the Forest Service rescinded its request for the Depot property.

The City met this news with mixed reactions, sorry to see the jobs go but pleased to have the flexibility to develop this major access to the interior of the Depot site, and they adjusted the Reuse Plan accordingly. However, since the property had been claimed in the federal screening, this newly available parcel was also subject to McKinney screening, which still kept its ultimate disposition in the air.

The Department of Corrections' interest created the expected controversy that was at least partially offset by its offer to contribute both to infrastructure parcelization costs and to community training and development programs. Agreement was reached to support this reuse through an active dialog among City officials, Corrections, and the community. When Packard Bell surfaced as a reuse interest, both the acreage and type of use envisioned by Corrections became incompatible in such close proximity to a major headquarters for a high-tech firm. Thus, the City offered to support Corrections in identifying another location in the near vicinity to the Depot site in return for a letter of rescission from Corrections for the requested Depot parcels. Corrections did rescind its request and is now working with the City to identify another site for its planned facility.

As the Reuse Plan was being finalized in the summer of 1994, the City of Sacramento prepared an application for economic development conveyance for the available property, planning to redevelop the site according to the Reuse Plan. However, redevelopment planning changed significantly when Packard Bell signed a letter of intent in the fall of 1994 to move to the Depot site. Packard Bell's potential interests encompassed most of the developable acreage the City was requesting from the Army. While general provisions of the Reuse Plan were still applicable, the primary redevelopment effort shifted to site modifications needed to meet Packard Bell's operational needs.

2.2.4

Sacramento Army Depot Reuse Plan Environmental Impact Report (EIR)

The ultimate objective of the Reuse Plan was to create an environment that would accommodate reuse of the site and the production of jobs. Achieving that objective required changing both the General Plan and Specific Plan designations. Implementation of the Reuse Plan required changing the General Plan designation for most of the site from Public/Quasi-Public to Industrial, and changing a portion of the site from Public/Quasi-Public to Parks, Recreation, Open Space. It also required changing a portion of the South Sacramento Community Plan from Industrial to Open Space.

Since these actions by the City of Sacramento are considered discretionary, they created a legal requirement under the CEQA for the City to prepare an EIR. The City hired a consultant to prepare the EIR. The Army provide both hard copy and electronic copy of its Draft Disposal and Reuse EIS to the City to assist its contractor and to ensure that the documents would be consistent.

However, when the Administrative Draft was delivered for review several inconsistencies were identified. The Army's environmental contractor, Foster Wheeler Environmental, arranged a

meeting first with the City of Sacramento then with the City and its EIR contractor to discuss and reconcile the differences. The most significant issue was air quality impacts. The EIR was based on a worse-case development scenario of approximately 7,500 employees at the site. Foster Wheeler Environmental performed air modeling and determined that the maximum employment that could be accommodated at the site without violating the Federal Clean Air Act was about 6,000 employees. The City agreed to revise its Reuse Plan and EIR to reflect that maximum employment level.

On November 1, 1994, the City Council certified the Final Sacramento Army Depot Reuse Plan EIR.

2.2.5

Economic Development Activities

Two major issues surfaced as the City of Sacramento was in the final stages of developing the Reuse Plan. Late in 1993, the Army notified the City that several requests for Public Benefit Conveyances of portions of the Depot had received approval from the federal sponsoring agencies. In the spring of 1994, screening of homeless providers began producing requests for McKinney Act conveyances of additional portions of the Depot. This forced the City to rethink the strategy for reuse of the Depot if significant portions were to be conveyed to public entities or homeless providers.

In April 1994, as the City of Sacramento was nearing completion on a reuse plan that incorporated the possibility of significant public uses for the property, DoD announced in public meetings the availability of a new procedure for property transfer, the economic development conveyance (EDC). Since the primary intent of this approach was making property available to create jobs, the City saw this as the preferred approach to redeveloping the Depot. Thus, along with completing the final Reuse Plan, the City began to assemble an EDC application for most of the available property at the Depot. That application, with the Reuse Plan as an addendum, was submitted by the City in August 1994. In November, the City submitted a revised application at the Army's request to address new guidance on the EDC process.

In addition to requesting all available acreage under an EDC, the City of Sacramento requested that the Army deny all public benefit conveyance requests, and modify some McKinney requests. **The primary concern was twofold: 1) leave a marketable core of property for redevelopment; and 2) ensure that all recipients of property would contribute their fair share to costs of developing the infrastructure to support parcelized use of the property.**

In late summer 1994, the City became aware of potential interest by Packard Bell Electronics in a new site for its main computer assembly plant and headquarters. Packard Bell had been displaced from its former facility in southern California by the Northridge earthquake, and was considering moving out of state. The City and Depot hosted numerous tours by Packard Bell officials and contractors. When definite interest in the site was established, the City and State put together a package of incentives to bring Packard Bell to the Depot property. The state legislature passed legislation granting tax incentives for Packard Bell for employees hired from the high

unemployment region surrounding the Depot. The City negotiated a loan guarantee that provided over \$26 million in funding for Packard Bell to make immediate and near-term improvements to buildings on the site to meet its production needs and local building code requirements. In late 1994, Packard Bell and the City of Sacramento reached an agreement in principle to bring the company to the former Depot site.

The City of Sacramento faced several additional challenges to consummate the deal with Packard Bell. First, the Army refused the City's request to deny all public benefit conveyance requests, and several of these requests were for buildings that were key to Packard Bell's needs. After the City approached each of the requestors with details of the Packard Bell opportunity, all public benefit conveyance requestors submitted letters rescinding their requests except for CSUS, for which the City negotiated an alternative site on the Depot property.

Likewise, the City of Sacramento carefully looked at each of the approved McKinney requests in light of the Packard Bell opportunity. Of the three approved McKinney requests, the two for California Emergency Foodlink appeared to be compatible with Packard Bell's near-term plans. The third approved request, for Vietnam Veterans of California, was not seen as compatible, since it granted two small buildings for detoxification and training that were located on either side of what would become Packard Bell's headquarters building. The City negotiated a relocation package that provided Vietnam Veterans with \$840,000 to obtain space at an alternate site in the Sacramento area.

Assuming approval of the EDC, the projected timetable for transfer would not have made the property available for deed transfer to the City of Sacramento until May 1995. However, Packard Bell needed to start limited production in January 1995 and be at, or near, full production by May 1995. To provide lead time for initiating building and site improvements, the City and Army negotiated an interim lease that made key parts of the property available to the City in December 1994. The City also assumed responsibility for portions of the common area maintenance on the site as part of the interim lease, which assisted the Army in accelerating its remaining closure actions and effecting deed transfer of 306 acres to the City of Sacramento in March 1995.

The City of Sacramento is seeing immediate payoff from the incentive package that attracted Packard Bell to the closed Depot. Packard Bell produced its first computers at the Sacramento plant in January 1995, and as of July 1995 was in full production with about 3,700 employees on-site. A second automated production line is nearing completion, and a third phase will be completed later in 1995, with a projected total employment on the site exceeding 5,000. Recognizing the potential afforded by the extra space available at the Sacramento site, Packard Bell established a motherboard manufacturing capability that was previously accomplished overseas, thus bringing up to 1,000 additional jobs to the U.S. and to Sacramento.

2.3 Relationship to Environmental Programs

The impending closure of the Depot affected other environmental programs. Impacts to the IRP are described later in Chapter 3. This section describes some of the key philosophies and major

actions taken by the Depot's Environmental Management Division (EVMD) to facilitate the closure process.

2.3.1

"Take the Lead" Philosophy

As the Depot began closing it learned of several documents and studies that were required. Often sample documents and/or procedures were unavailable. Rather than wait for the general guidance to be developed, EVMD developed a general strategy of moving ahead with the work. This strategy often put the Depot in the lead. With the assistance of ACOE project managers, the regulatory agencies, and the Depot's contractors (Foster Wheeler Environmental and Kleinfelder, Inc.) the Depot was able to develop an approach that made good business sense and was defensible. Not only did this philosophy provide additional flexibility to SADA, it allowed the work to be completed on a fast-track basis. In addition, the Depot's approach often ended up shaping the policy and procedures ultimately developed by the Army.

2.3.2

Dual Effort Approach

Another general approach used by EVMD was referred to as "dual effort." **Dual effort was the use of studies to satisfy more than one requirement.** A good example was the preparation of this BCP. When DoD policy to prepare a BCP was established, rather than opting to have the AEC prepare the document, EVMD decided to prepare the report themselves. This allowed them to have control over the document, its quality, and the schedule. Rather than waiting for funding, EVMD was able to obtain approval from USEPA and Cal/EPA to use the BCP to satisfy its annual IRP report requirement. Thus, funds already set aside to prepare the annual report were used to fund the BCP and only one document had to be prepared rather than two. Using this approach, the Depot was the first Army installation to complete its Version 1 BCP, which was submitted to the Department of the Army almost two months ahead of schedule.

2.3.3

Agency Review of Documentation

Quick document review has always been a high priority for the Depot. The Depot worked with the agencies in developing several methods to expedite document review. These methods played an important role in the fast-track cleanup process and accelerated the Depot's transfer to the City. The methods used are as follows:

- Agencies were involved in the development and format of documents from the beginning. Buy-in at the start was important.
- Pre-drafts by document sections were submitted to the agencies to acquire early comments.

- Pre-drafts were submitted un-edited by the Depot. Content, format and direction were the focus—not grammar.
- Scheduled timelines for return of comments were established. Oral comments were accepted by telephone and written comments by facsimile and mail. The most efficient and least time-consuming method was to process comments written directly on the pages and margins of the document.
- Contracted consultants dealt directly with the agencies. Technical staff of all parties dealt directly with one another and developed a single unified comment.
- Previous comments from other documents were incorporated in the new document to avoid repeating the learning curve.
- Tiger Team document review meetings were held to review the documents by sections and resolve immediate comments.
- Certain sections and areas in the document were deferred to the agency with the highest expertise to submit comments to the group. The group as a whole then discussed the comments to reach consensus.
- All documents were maintained as “living documents” until finalized. This allowed for incorporation of updates on changing conditions.
- Program managers dealt with the major issues only; staff dealt with all other comments.
- Simultaneous document reviews were held at different phases so that if the agencies had difficulties with one document, they could focus on others, thereby continuing progress. This kept the project moving while buying time for further resolution of issues.
- Itemized responses to original agency comments were submitted to the agencies for approval before producing the Draft Final EBS documents. The agencies could then be certain their comments were addressed and did not have to waste time looking for, or re-creating, previous comments.

Of these methods, **the one item that saved the most time was the Tiger Team meetings.** The Depot held these 1- to 3-day meetings off-Depot at a retreat site. The ability to focus on the document without distraction was essential to the quick review and resolution of issues. The cost was minimal compared to the time saved and the working relationships gained through this type of approach.

2.3.4

Agency Cooperation

Environmental cleanup and closure is not a battle — the agencies and public are not the enemy — success is dependent on cooperation — the only winner or loser is the local community.

Since the inception of the IRP program in 1986, the Depot has made fostering a good relationship with the regulatory agencies, ACOE, public, and chain-of-command a priority. A strong sense of partnering was developed through open and honest discussion along with presentation of uncensored or unedited information. **A key to developing a good relationship was to jointly set goals for the program.** These goals were optimistic with a milestone time-line created to obtain them. The team also took a holistic approach to the Depot's environmental programs. This created a one-stop shopping atmosphere and was critical when dealing with RCRA, CERCLA, and local environmental requirements during closure. Another important function was team involvement with all aspects of the program, including input into management, direction and operations. The environmental program was based on the ability to be flexible and to not be tied to a single track. The Depot considered the environmental program to be a people program with clean-up being achieved through cooperation.

2.3.5

Funding Approach/Philosophy

The closure and reuse of the Depot was successful, in part, as a result of EVMD's funding approach and philosophy. Funding requests often must be prepared several years in advance. Therefore, EVMD staff tried to anticipate funding needs and requirements as far into the future as possible. General work descriptions were used to obligate the funds. These descriptions often used general terms such as "provide BRAC support documents" that allowed flexibility by ACOE in preparing specific scopes of work once the actual needs were determined. Toward the end of each fiscal year ACOE would prepare work scopes for future tasks in anticipation of "end of the year money." Calls were received from headquarters informing SADA that funds were available and, if they could be obligated within 30 days, ACOE was prepared and able to obligate the funds.

Although much of the BRAC work had not been performed before, work with the Depot's contractors was able to move quickly through the use of unpriced delivery orders. These unpriced delivery orders allowed the contractors to begin work right away and develop a sense for the level of effort required to do the work before the task was completely negotiated with ACOE.

2.3.6

Depot Support to the Environmental Baseline Surveys

The EVMD did not wait for guidance to be issued to begin preparation of the EBS documents. As mentioned in Section 2.1.5, EVMD decided at the outset to divide the Depot into several

small study areas to provide flexibility for leasing or disposal. This approach proved to be very beneficial allowing EBS documentation to be prepared quickly (and reviewed quickly) for those areas subject to outgranting or transfer.

Another decision made by EVMD was the level of effort required for the EBS documents. While several installations prepared basewide EBS documents that provide a general overview as to the installation's environmental condition, EVMD decided to prepare site-specific studies of sufficient depth so that they could be used by the private sector to secure bank financing. This level of detail was determined to be necessary because there was not a large demand for industrial property (especially aged military property) in the Sacramento region and vacant land is plentiful. Therefore, if the Army was to attract the private sector, it had to provide sufficient documentation that the site was free of contamination and suitable for reuse.

To reduce the cost of cleanup, EVMD formed an in-house decontamination team toward the end of 1993. The "Decon Team" was comprised of about 20 Depot maintenance employees. All members received the 40-hour health and safety training and a baseline physical. Personal Protective Equipment (PPE) and general cleaning equipment (e.g., pressure washers) were purchased for use by the team. The Decon Team would go into facilities and perform general housecleaning once the mission had been relocated and equipment removed. This was generally done prior to the EBS site inspections, thus minimizing the need for reinspection to ensure the facility was clean. In addition, the Decon Team played a major role in cleaning the Plating Shop and other highly contaminated areas of the Depot. At the plating shop, the Decon Team removed and cleaned all duct work allowing it to be disposed of in an unrestricted class III landfill. Plating solutions were disposed of as hazardous wastes, but the tanks were cleaned and offered for resale through DRMO. Very little had to be disposed of as hazardous waste. **In addition to providing jobs for these individuals, EVMD estimated it saved over \$1 million in decontamination costs from this facility alone!** The Decon Team also played a key role in the painting shops and graphic arts facility.

2.3.7

Inventory Removal

As the Depot neared closure, EVMD took the lead in removing hazardous material inventory left behind by either tenants or missions that had been realigned. By acting quickly, hazardous chemicals could be offered for sale through DRMO before the shelf-life expired so they would not have to be disposed of as hazardous wastes. Others were collected, sorted and disposed of as hazardous wastes. One tenant vacated the installation leaving behind 160 pallets of hazardous waste. They had earlier reported that they would be able to relocate the waste from the Depot site. This change required some quick adjustment of plans to dispose of this large quantity of waste as the hazardous waste storage facility was being phased down.

2.3.8

RCRA Facility Closures

Two RCRA facilities had to be closed in anticipation of the installation closure: Building 411, the former Battery Acid Dumping Facility; and Building 412 the Hazardous Waste Container Storage Area. Building 411 was built specifically to allow battery acid (electrolyte) to be removed from batteries prior to shipping. Shortly after the facility was operational, Cal/EPA determined that removing the battery acid was “treatment” and the facility must have a RCRA permit if its use was to continue. The Depot decided the cost of permitting the facility was too high, and decided to abandon its use. At closure, Cal/EPA was generous to allow the facility to be closed “as if it were a RCRA-permitted facility,” rather than require the Depot to first go through the permit process, then close the facility. EVMD prepared the closure plan for Building 411 and was assisted in closing the facility by Foster Wheeler Environmental. Foster Wheeler Environmental also handled the closure of Building 412, currently in progress.

2.3.9

UST Removal

The location and condition of all UST had been documented a few years before the Depot was placed on the closure list. Those USTs that would not meet upcoming regulatory requirements were removed as part of the Depot’s UST management policy. By the time the Depot began realigning its missions, only four USTs remained on the site (See Section 3.2.1 regarding USTs). Although these last four tanks had been tested and were fit for use, they were removed prior to final closure, so that the Army would be able to demonstrate that these tanks had not leaked and, thus, **limit future Army liability by documenting clean closure**. At the time of publication, a geophysical survey was being conducted at the site where UST No. 300-17 is believed to have been located. Preliminary data does not suggest the presence of a UST.

2.3.10

Asbestos and Lead-based Paint

As part of the closure, the Depot managed a comprehensive asbestos and lead-based paint survey performed by CAL INC. Friable asbestos and lead-based paint that posed a threat to human health was either encapsulated or removed by EVMD staff. The location, amount, and condition of both the asbestos and lead-based paint was disclosed to the City of Sacramento prior to transfer, **thereby meeting the disclosure requirements of California law** and removing responsibility and liability from the Army for further management of these materials.

2.4

Interim Leasing

Because the Sacramento economy was not robust, the Depot staff and ACOE decided that the Depot should aggressively pursue an active interim leasing program (the term “leasing,” as used in

this section, includes permits, licenses and leases). This program was determined to be beneficial because it could:

- Attract business to the Depot and provide jobs for displaced Depot employees
- Attract business to the Depot that could purchase property when it became available
- Reduce deterioration of the Depot's infrastructure by keeping systems in use
- Facilitate marketing the Depot property by showing active facilities rather than a boarded up ghost town
- Demonstrate to the political community a DoD "good faith" effort to mitigate base closing impacts, such as the loss of jobs
- Provide funds to offset the cost of a caretaker force

However, at the time higher headquarters did not wish to aggressively pursue leasing. Therefore, it took the Depot more than a year to receive approval to begin leasing.

The Depot's Basewide Report of Availability (ROA) was approved on December 21, 1993. As described in Section 2.4.2, an Environmental Assessment (EA) for leasing and a Finding of No Significant Impact (FNSI) were prepared to address environmental issues concerning leasing. The provisions of the Basewide ROA required preparing and signing an EBS and FOSL before any lease could be executed. A lease involving industrial usage also required preparing a Leasing Execution Plan (described in Section 2.4.3).

Under the Basewide ROA and EA, the Depot entered into interim leases with the U.S. District Court, California Emergency Foodlink, Operation Santa Claus and others (Table 2-4). The only lease still in effect is for Foodlink, which will expire upon assignment of the parcel to HHS.

2.4.1

Report of Availability

Army Regulation (AR) 405-80, Granting Use of Real Estate, requires that a ROA be prepared before land or facilities can be considered for use by a non-Army entity. It documents environmental, cultural, historical reviews, and site specific restrictions. The ROA is prepared by the installation and is forwarded through the chain-of-command. When approved, the ROA becomes the document that authorizes the real estate office to prepare the lease, license, or easement.

As part of its commitment toward interim leasing, the Depot decided to make all of its property available. The Command determined that it would relocate operations to make facilities available should an interest in a specific building arise.

The first Basewide ROA was submitted to higher headquarters for approval on February 24, 1993. It was also learned, after submittal of the first Basewide ROA that easements could not be granted without an ROA. This became an issue as the Depot struggled with infrastructure

disposal (Would easements need to be granted to utility purveyors?) and the request by the City of Sacramento for a road easement through the South Post to facilitate future traffic flows. Comments were received by the Depot and a revised ROA was submitted on April 27, 1993. It was later determined that the most promising method to address the issues raised by headquarters was to send a team of Depot and ACOE staff to Washington, D.C. to meet with the originators of the comments. This trip occurred in June 1993.

One of the major problems with leasing was the development of a Preliminary Assessment Screening (PAS). A PAS is very similar to an EBS and has since been replaced by the use of an EBS. At the time, there was a requirement to prepare a Basewide PAS to cover the same territory as the ROA. However, it was agreed that site-specific PASs would be prepared prior to entering into an outgranting arrangement. This allowed the EA and ROA to go forward without an actual Basewide PAS.

The ROA was eventually approved at all levels and was forwarded to Sacramento ACOE Real Estate on January 12, 1994. This ROA gave the Deputy Assistant Secretary of the Army authorization to approve and enter into interim leases at SADA.

2.4.2

Environmental Assessment/Finding of No Significant Impact for Outgranting

NEPA and AR 200-2 require either an EA or a categorical exclusion prior to grants of leases, licenses or permits to use existing Army facilities for non-Army uses. Use of categorical exclusion (CX) A-21 requires that there be an existing land use plan that has been environmentally assessed and that the activity is consistent with that plan. Since the Depot could not meet that requirement, it was determined that an EA would be prepared to address the outgranting (leasing) program.

Work preparing the Outgranting EA began in January 1993 with a draft being completed by mid-February. To avoid adverse impacts from traffic, additional modeling was performed in March 1993 to determine employment levels below which no significant impact would occur. The draft EA was sent out for review with DESCOM's comments being incorporated into the document the end of April. However, other comments received from DA raised new concerns.

Their major concern with regard to the EA and leasing program was the potential conflict with 10 USC 2692. This statute generally prohibits the storage or disposal of nondefense toxic and hazardous materials on DoD installations. This restriction would conflict with the intent of leasing excess property under 10 USC 2667. To resolve this and other issues in a timely manner, the Depot staff, Headquarters staff, the Sacramento District, and Foster Wheeler Environmental met together in July for two days at the Depot to review and revise the EA. The FNSI was signed by the Depot Commander, COL William Grundy, on July 15, 1993.

A key provision incorporated into the revised EA/FNSI was to restrict leases to "like use," similar to uses formerly performed under Army ownership. To avoid adverse traffic impacts, the number of lessee employees allowed at the installation was limited to a range between 967 and 1,675.

More employees were allowed as the number of government employees at the Depot was reduced. Residential uses and vehicle speed contests were specifically prohibited. Construction of new facilities or extensive changes to existing facilities would require additional NEPA analysis. (This provision resulted in additional analysis having to be done to support the interim lease to the City that allowed Packard Bell to begin remodeling the Depot prior to the March 3, 1995 deed transfer). Adverse impacts to worker health and safety were avoided by performing a PAS (described in Section 2.4.3.1). Lessees were also required to obtain their own environmental permits for operations.

2.4.3

Leasing Execution Plan

The Leasing Execution Plan grew out of negotiations with higher headquarters over leasing Depot facilities. As mentioned earlier, there was legal concern about the storage and use of hazardous materials at the Depot by non-Army entities. Since the Depot facilities were primarily industrial in nature, it seemed likely that users would also be industrial operations and would, therefore, use hazardous substances. To alleviate this concern, the Depot developed a Leasing Execution Plan.

The purpose of the Leasing Execution Plan was to provide additional information on the proposed lease. The information was used to ensure that uses proposed by the applicant conformed to the restrictions placed in the ROA and the EA. Because the Depot is an industrial facility, it is also necessary that the leased facilities be free from contamination that could threaten worker health and safety and that the lessee's proposed uses would not expose the Depot workforce to health and safety hazards, or the Army to liability from improper disposal of hazardous wastes.

A Leasing Execution Plan was completed for each proposed lease and included the following documents:

- PAS or EBS
- Lessee-Provided Information
- Proposed Use Assessment

This Leasing Execution Plan was attached to the REC, which accompanied the ROA and EA/FNSI.

2.4.3.1

Preliminary Assessment Screening

The PAS is essentially the same document as the EBS. During the closure process, the requirement for preparing a PAS was replaced by the requirement to prepare an EBS, so that both leases and transfers of real property required an EBS. The purpose of the PAS (or EBS) was to develop sufficient information to adequately assess health and safety risks; define the nature, magnitude, and extent of any environmental contamination; and identify the potential

environmental contamination liabilities associated with the facilities to be leased. Although leasing real property does not require that the facilities meet the criteria of CERCLA Section 120(h), it is in the government's best interest to establish a baseline for the facilities to ensure that their use does not adversely affect human health or the environment and to document the presence or absence of any contamination.

2.4.3.2

Lessee-Provided Information

Once the facilities were determined to be clean and available for leasing, the applicant filled out a questionnaire to provide information about proposed operations. This questionnaire enabled the Army to determine whether the proposed use of the property was compatible with the existing land use (as required by the EA) and assist in the identification of potential hazards. The information supplied by the lessee included the following:

- **Description of Operations**
 - Employee requirements (number of employees, hours of operations, parking requirements, etc.)
 - Number of former Depot employees hired
 - Facility needs, improvement to premises (in lieu of rent)
 - Transportation Management Plan
- **Permits**—List of permits required for operation.
- **Wastewater Discharges**—Including direct discharges (National Pollution Discharge Elimination System [NPDES]), indirect discharges (Public Owned Treatment Works [POTW]), stormwater discharges, certification/licenses.
- **Air Emissions**—Including use of chlorofluorocarbons (CFCs) and ozone-depleting compounds. Compliance areas include: fuel burners, incinerators, volatile organic compounds (VOC) sources, hazardous emissions, fugitive emissions and vehicle emissions.
- **Polychlorinated Biphenyls (PCB) Storage**—Equipment in-use, PCB storage facility and disposal.
- **Hazardous Waste**—Generator requirements; treatment, storage, and disposal (TSD) requirements; hazardous materials storage requirements; flammable/combustible storage and handling; and disposal of hazardous waste.
- **Hazardous Materials**—Copies of Material Safety Data Sheets (MSDS) for all hazardous materials
- **Solid Waste**—Facility permit, monitoring, reduction plan and disposal

- **Spill Control**—Spill Prevention Contingency and Countermeasures Plan/Installation Spill Plan (SPCC/ISP)
- **Noise**—Noise generating sources and expected levels
- **Pesticides**—Application, certification, storage, handling and disposal

2.4.3.3

Proposed Use Assessment

After the questionnaire was completed by the applicant, the Proposed Use Assessment was prepared by the Depot staff to determine whether the proposed use was consistent with use restrictions in the EA. The Proposed Use Assessment included the following information and could result in lease restrictions.

- **Compatibility Review**—Use of this checklist allowed the Depot to address the following issues with regard to the proposed lease:
 - Is the proposed use consistent with restrictions placed on leasing activities by the EA?
 - Is the proposed use consistent with existing land uses?
 - Will the proposed use interfere with IRP cleanup efforts?
 - Will the use affect any threatened and endangered species?
- **Monitoring Program/Oversight Plan**—If necessary, the Depot developed a monitoring program/oversight plan to ensure that hazardous materials and wastes were handled according to regulations, and that the lessee was complying with all regulations pertaining to the operation of the facility. (This action was never required).
- **Spill Prevention Control and Countermeasure Plan/Installation Spill Plan**—If hazardous materials were proposed for use at the Depot, in addition to preparing a Monitoring Program/Oversight Plan, the Depot would revise its SPCC/ISP to account for any impacts produced by the lessee. (This action was never required).

2.4.4

Finding of Suitability to Lease

Prior to all outgranting actions (e.g., a license or lease), a FOSL was prepared. The FOSL was based on DoD guidance entitled, “DoD Policy on the Environmental Review Process to Reach a Finding of Suitability to Lease (FOSL).” If the Leasing Execution Plan indicated that the applicant could comply with the EA requirements and mitigate or avoid contamination concerns, the outgranting was approved. If that was the case, a FOSL was prepared. The final outgranting

package consisted of a copy of the FNSI for outgranting, a REC to document that the use was consistent with the EA/FNSI, the EBS, the FOSL, and the outgranting document. A utilities support agreement was also attached to address how utility costs would be levied by the Depot. A list of interim agreements is presented in Table 2-4.

2.5

Property Transfer

This section discusses the portions of the Depot that have been requested for transfer or disposal. They are the result of DoD screening, federal screening, McKinney Act screening, and state and local screening process as illustrated in Figure 2-5. These requests are summarized in Table 2-5. Maps of the initial and final requests are presented in Figures 2-6 and 2-3, respectively. Property was not transferred until it was vacated, surveyed, and found to be suitable for transfer. In many cases, several months transpired between the time a building was vacated and its parcel was available for transfer.

In addition to property transfers discussed in the following paragraphs, the BRAC 91 Commission recommended retaining up to 50 acres for an Army Reserve Enclave. The area set aside on the south and southeast portions of the Depot was divided between the Army Reserves (39.1 acres) and California Army National Guard (22.3 acres). The total acreage (61.4 acres) set aside exceeded the recommended 50 acres because of the inclusion of unusable Morrison Creek easement acreage and final surveys to conform to natural boundaries.

2.5.1

Property Transfer Methods

Methods available for use by the Army to transfer or dispose of real estate are:

- **Transfer to another DoD or federal agency**—Property may be disposed of by transfer to another federal agency or to another part of DoD.
- **Assignment pursuant to McKinney Act**—The Army can assign the property to the HHS, which could convey or lease the property to an approved homeless provider.
- **Public Benefit Discount Conveyance**—State or local government entities may obtain property at less than fair market value when sponsored by a federal agency, for uses that would benefit the public (i.e., education, parks and recreation, wildlife conservation, public health or airport use).
- **Economic Development Conveyance**—Property can be transferred to a local redevelopment authority at or below fair market value for the purpose of generating jobs at a closing military site.
- **Negotiated sale**—The Army can sell the property by negotiation to state and local agencies at fair market value. A sale can also be negotiated with private entities, but this is done only in rare cases.

- **Competitive sale**—The Army's policy is to encourage competition in the sale of property to private entities either through sealed bids or auction.

2.5.2

Property Transfer Requests and Results

2.5.2.1

DoD and Federal Transfer of Property

DoD Property—Under DoD screening, the Navy/Marine Corps Reserve Training Center requested to retain its location (about 17 acres) in the southwest corner of the Depot (EBS Study Area 91). The request was granted and the property was transferred to the Navy on April 17, 1995.

Federal Property—During the federal screening process, the U.S. Department of Agriculture, Forest Service requested property along the Depot's main frontage road for office and administrative uses. The Forest Service requested a 26.9-acre parcel located along the north boundary of the Depot comprised of EBS Study Areas 2, 3, 4, 5, 6 and 7. Eventually, the request was withdrawn. The Forest Service was very interested in the Depot site for relocating its regional headquarters from San Francisco to a site more central to its field operations and with ample parking. The Depot hosted numerous visits with Forest Service officials, and a detailed study was done for them of the current condition and code status of Building 150, which was the centerpiece of their request. The Forest Service was in the process of getting approval from Washington, D.C. for the move from one congressional district to another when BRAC 93 was announced. Potential sites were now available within the Bay Area, and a decision was made to move to Mare Island instead of the Depot. With the Forest Service's withdrawal of their request, this parcel was announced as available for screening for other reuse interests.

2.5.2.2

No-Cost Public Benefit and McKinney Conveyances

No-Cost Public Benefit Conveyance—During the state and local screening processes, requests for land at the Depot at a public benefit discount were received from City of Sacramento Fire Department; CSUS Foundation; the Los Rios Community College District; the California State Department of Corrections, and the California State Department of Transportation. The initial requests are shown in Figure 2-6. After negotiations with the City of Sacramento based on the potential for Packard Bell coming to the site, all of these requests were withdrawn, with the exception of CSUS. The City and CSUS agreed to an alternate location on the Depot for CSUS, which is shown in Figure 2-3. Conveyance of 8 acres to CSUS should occur by the end of 1995.

Since California Department of Corrections was planning a major new facility at the Depot, considerable effort was put into initial site planning prior to withdrawing their request. The Depot and ACOE conducted numerous tours and provided detailed utility drawings and other information to contractors working for Corrections. ACOE real estate personnel worked with

Corrections to define boundaries for their proposed site which would optimize their needs while reducing conflicts with other known reuse interests. While Corrections was willing to make a sizable contribution to redevelopment and infrastructure costs for the Depot site, the acreage and road frontage they desired were not compatible with the scope of Packard Bell's interests. Thus, the City agreed to support Corrections in finding another suitable site in the vicinity in exchange for a letter rescinding their request for Depot property.

McKinney Act Conveyance—Under McKinney screening, requests were initially received from California Emergency Foodlink, California Vietnam Veterans, Operation Santa Claus, and the Sacramento Housing Alliance. These requests are shown in Figure 2-6. Federal agency approval was granted only for the requests from California Emergency Foodlink and for a portion of the California Vietnam Veterans request. To avoid conflict with the redevelopment potential of the property and Packard Bell's expressed interest in Building 150, the City purchased the Vietnam Veterans' interest for \$840,000, thus allowing them to relocate to another site. Conveyance of 28 acres to California Emergency Foodlink, shown in Figure 2-3, is in process and should be concluded by the end of 1995.

2.5.2.3

Economic Development Conveyance

The use of an EDC was first published in the Federal Register as an interim final rule in April 1994. In October 1994, it was published in the Federal Register as an amended interim final rule.

In its initial EDC application in August 1994, the City of Sacramento requested all Depot property other than the Army Reserve Center, California National Guard area, and the Navy/Marine Corps Training Center. The Army stated that the City had the burden to get the state and local agencies to withdraw their applications for conveyances that had already been approved by a sponsoring federal agency. In the end, one McKinney (Foodlink) and one public benefit conveyance (CSUS) remained on the site. The City then requested that the remaining 371 acres be conveyed as an EDC (see Figure 2.3).

After review of the City of Sacramento's revised (November 1994) EDC application, and negotiations between the City and the Army, agreement was reached to convey the 371 acres (including all infrastructure) to the City for an adjusted fair market value price of \$7.2 million, payable in year 10 when the City anticipates Packard Bell will exercise its purchase option for the property it is leasing. The City also agreed to take over operation of the infrastructure on the site as is, and to provide continued use by the Reserves of the Hannum Hall area rent free until the south post Reserve Center is built. These factors were included by the ACOE in negotiating the adjusted fair market value for the property being conveyed to the City. Other terms and conditions can be found in the MOA and Quitclaim Deed available from the Sacramento District, ACOE Real Estate Division.

The appraisal was developed using the new guidelines contained in the DoD Interim Final Rule, which stated that the value should not be based on the highest and best use, but rather the most

likely range of uses consistent with local interests. Therefore, the appraisal took into consideration the City of Sacramento's Reuse Plan.

The appraisal was prepared by Wirth Real Estate Valuation Services, Woodland, California, under contract with ACOE. The appraisal found the fair market value to be within the range of \$6 to \$8 million. A significant influence in the appraisal analysis was the property's extraordinary size. The size of the property requires longer than usual absorption considerations because of the super adequate size related to the Sacramento industrial market area.

The appraisal concluded that "Despite a marginal return indication, the property represents an extraordinary opportunity to large construction companies that wish to establish or maintain industrial presence in the Sacramento market area which has a good long-term growth horizon for this real estate market sector. Additional profits through the increased profit potential of providing turn-key building solutions would be motivating to a number of contractors. At the appraised value the property represents an excellent opportunity for such a company. It is also possible that a larger single user could bring about a significant use of a sizable portion of the property and increase the profit potential of the development through substantial reversion early in the forecast period."

In the EDC application, the City of Sacramento offered to provide the Army with a \$5 million second-trust deed at 3 percent per annum on the property due and payable in 10 years or upon purchase of the property by Packard Bell.

To prepare for negotiations, ACOE received its negotiation strategy from the Deputy Assistant Secretary of the Army (Installations and Housing). The Corps also received a request from the Army Reserves to negotiate a leasehold interest in a portion of the installation, at no cost other than utilities, until September 2000.

Highlights of the negotiated economic development conveyance to the City of Sacramento are:

- The Army will receive a cash payment of \$7,160,000 on March 1, 2005 regardless of whether Packard Bell exercises its option to purchase.
- The City provided the Army with a promissory note and first trust deed on the former SADA property.
- If the City sells the property within the next 15 years for an amount greater than \$7,160,000, any net profits received up to an amount equal to a value of \$9 million (in 1995\$) will be payable to the Army.
- The City will provide at no cost, leasehold interest in the portion of SADA known as Hannum Hall and several other buildings until September 30, 2000. The Army will deed the remaining 65-acre parcel to the City when environmental cleanup is completed.

On March 3, 1995, 306 acres (that portion of the 371 acres found suitable to transfer) was deeded to the City of Sacramento. Per the MOA, the remaining 65 acres (located in the west-central and southwest portions of the Depot) will be transferred in two phases from the Army to the City by 1996, after remedial action has been taken (Figure 2-3). Table 2-6 identifies those EBS Study Areas that were immediately available for transfer (high reuse priority) those that had minimal contamination and would be transferred to the City in Phase I (medium priority) and those (low priority) that would take the longest to remediate (Phase II transfer).

2.5.2.4

Negotiated Sale

During the state and local screening process, the State of California Employment Development Department requested property under a negotiated sale arrangement. It requested 100,000 square feet of warehouse space and 75,000 square feet of administrative space. However, the request was withdrawn.

2.5.3

Finding of Suitability to Transfer

Before property was transferred by deed, a FOST was prepared. All FOSTs were prepared based on two DoD guidance documents issued in June 1994, entitled, "DoD Guidance on the Environmental Review Process to Reach a FOST for Property Where Release or Disposal Has Occurred" and "...For Property Where No Release or Disposal Has Occurred." The FOST was reviewed and commented on by the regulatory agencies, Department of the Army, Army legal counsel, and others. All comments were incorporated into the documents. As required by the guidance, notices of intent to sign a FOST and notices of signing the FOSTs were published in the Sacramento Bee. Both FOSTs were signed by Lewis D. Walker, Deputy Assistant Secretary for the Army on February 10, 1995. One FOST was for the transfer by deed of 306 acres to the City of Sacramento (for use by Packard Bell). The second FOST was for transfer of 28 acres to HHS for subsequent transfer to California Emergency Foodlink, Inc.

Policy does not require the use of a FOST and EBS to transfer real property to another federal agency such as HHS. However, the Depot prepared these documents so that HHS would not have to prepare them prior to transferring the property to Foodlink (a private enterprise). One room of a building to be transferred to HHS contained lead-cadmium batteries and had been used for an uninterruptable power supply for the Depot computer system. Foodlink wanted to take possession of the batteries and the FOST was prepared with the stipulation that HHS assume the responsibility for the batteries and cleaning the room the batteries were stored in. HHS refused to accept the transfer under those conditions. The Army then removed the batteries, cleaned the room, and prepared an amendment to the original FOST removing the requirements that HHS assume any responsibility. The amendment was signed by the BEC and forwarded to ACOE Real Estate for delivery to HHS. It is hoped that these additional cleanup measures will enable HHS to accept the transfer.

2.5.4

Infrastructure Disposal

Generally, public entities and utility purveyors will not accept responsibility for infrastructure without having the existing roads and utility systems brought up to current building codes. Because of the obvious necessity to deal with the infrastructure issues, the Depot formed a working group comprised of the Army, the City of Sacramento (and Redevelopment Agency), and all of the installation's tenants. This group met monthly to discuss infrastructure issues, coordinate with each other, and resolve concerns. As part of this effort, Foster Wheeler Environmental was tasked to prepare an Infrastructure Condition Survey. The purpose of the survey was to ascertain the present condition and capacity of the infrastructure, estimate its present value, and determine the cost to bring the systems into compliance with existing codes. The study included an analysis of the water, electrical, natural gas, telephone, sanitary sewer, storm drain, roads, railroad, and street lighting systems.

An early "ball park" estimate of the cost to upgrade the utility systems to meet code requirements was \$22 million: \$3 million for water, \$11 million for sewer, \$3 million for railroads, \$1 million for gas, \$2 million for the electric system, \$1 million for roads and \$1 million for telephone. However, the final results of the Infrastructure Condition Survey estimated that it would only cost \$4.7 million to bring all of the utility systems up to code.

Ultimately, infrastructure disposal became a non-issue. The infrastructure was transferred to the City of Sacramento as part of its EDC. More detail on the Depot's approach to infrastructure disposal is presented in Appendix D.

2.5.5

Permit Closeout

2.5.5.1

Water Discharge

A NPDES permit is required to discharge water from the Depot site. The SADA had a NPDES permit for discharging storm water runoff to Morrison Creek that was terminated by the Army upon transfer of the Depot.

The Army plans to apply for a new NPDES permit to discharge groundwater treatment plant effluent into Morrison Creek.

2.5.5.2

Air Quality

Air quality permits are typically renewed annually. During the annual renewal the source must remit fees associated with these permits. If a process or emission unit is permanently discontinued, a facility may either surrender the permit at the time of renewal or submit an application for Emission Reduction Credits (ERCs) for the process or emission unit. The ERC

provides the holder with the ability to emit a specific pollutant at a specific annual limit. ERCs have a monetary value and may be sold or traded within specific geographical limitations.

The ability to emit pollutants to the atmosphere in the Sacramento area is significant because the air quality does not currently meet the state and federal ambient air quality standards (AAQS). In areas where the air quality does not meet the AAQS, a limit (in tons of pollutant per year) is placed on the quantity of pollutants allowed to be emitted into the region's air from all permitted sources. If new sources are sited within these non-attainment areas, they cannot emit more pollutants than are currently emitted. Therefore, they must either reduce pollutant emissions from an existing source, or purchase ERCs. In the Sacramento area, ERCs are issued by the Sacramento Metropolitan Air Quality Management District (SMAQMD) to sources that have reduced pollutant emissions from an existing facility by either installing pollution control systems or by permanently shutting down the operation emitting the pollutants.

SADA operated a number of sources that required air quality permits. These permits were issued by the SMAQMD and defined the operational limitations for these sources. As of June 1994, SADA maintained 46 air quality permits for various boilers, internal combustion engines, paint booths, degreasers, and abrasive blasting booths. These permits allowed SADA to emit pollutants into the atmosphere.

The closure of SADA involved the permanent shutdown of numerous processes that emitted air pollutants to the atmosphere. The emissions associated with these processes are quantified using actual operating data in the form of fuel use or product/material usage, and approved emission factors (which correlate operational data and emissions). These data are used to develop an ERC application.

Most of the 46 emitting sources were paint booths and internal combustion engines used for emergency backup generators. These types of sources were removed from SADA prior to transfer and sent to other military installations through the DRMO process. These removed sources were used to develop the ERCs.

Some of the 46 sources were transferred to the City of Sacramento. The City will decide whether to use the sources or apply for ERCs to support reuse of the property. These sources were typically boilers used for space heating.

It is important to define as soon as possible the equipment/processes to be discontinued that may be used to generate ERCs and those that will be transferred. This will allow for the implementation of data collection required to quantify representative emissions for the ERC application. Otherwise, overly conservative estimates must be made that could reduce the ERC yield from the installation's closure.

It is also important to meet early with the regulators to define the ERC potential. These meetings establish lines of communication and lead to a strategy for ERC quantification, as well as an approved methodology for their quantification.

2.5.5.3 Sanitary Sewer

SADA originally installed its own sewer system and treatment plant for domestic waste. A separate system was used for industrial waste as explained in the oxidation lagoons discussion. In the 1960s the Depot hooked into the County of Sacramento Regional Sewer System and no longer used the treatment plant for domestic waste. In the late 1970s the oxidation lagoons were abandoned and an industrial waste treatment plant (IWTP) was built for non-domestic waste of the graphics and plating shops. The IWTP effluent line was routed to the old domestic treatment plant so the two clarifiers could be used and the treated industrial wastewaters tested prior to disposal into the county sewer system. This gave the Depot the ability to assist the County by timing its disposal during off-peak hours.

The sewer permits are renewed every two years and the County verifies the required testing of discharge on a random basis. Fees are based on the gallons discharged and metered by the Depot and County at separate locations. The Depot submits a monthly report on the amount discharged and the test results. The Depot has a total allowed discharge capacity to the County of 17.5 million gallons per month and is allowed to average results that do not exceed maximum allowable contaminants.

In May 1995, a revised sewer permit was negotiated with the County of Sacramento reflecting only the Depot's discharges from the South Post Groundwater Treatment Plant. The 17.5-million-gallon capacity was maintained, but the IWTP allowable discharges were modified or eliminated. It is anticipated that this permit will be maintained until 2001 when groundwater cleanup is completed. This renegotiation occurred too early. All buildings had not been transferred and a few remained that required additional cleaning. Although the wastewaters are not hazardous they cannot be discharged to the sanitary sewer under the recently renegotiated permit. Therefore, the Army has talked with the County and plans to acquire a one-day permit to dispose of these wastewaters.

The existing on-Depot sewer system and treatment plants (except groundwater) were transferred to the City of Sacramento in March 1995 for its reuse needs.

2.5.5.4 RCRA Permits

Building 411, the former Battery Acid Dumping Facility, was closed as if it were a RCRA-permitted facility. Foster Wheeler Environmental is handling the closure of Building 412, currently in progress. Both of these RCRA closures are discussed in Section 2.3.8.

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Table 2-1.
Actual Land Use and Employment as of July 1995,
and as Considered in the Disposal and Reuse Environmental Impact Statement

User	Gross Acres	Employment
Actual Land Use and Employment (July 1995)		
City of Sacramento/Packard Bell	305.6	3,700
California Emergency Foodlink, Inc.	28.0	12
California State University, Sacramento	7.6	0
Army Reserve Training Center	39.1	35
California Army National Guard	22.3	4
U.S. Navy/Marine Corps Reserves	19.2	29
Caretaker	65.1	2
Total	486.9	3,782
EIS Alternative 1: Employment Center (High Intensity Reuse)		
Employment Center	406.3	15,557
Army Reserve Training Center	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Total	486.9	15,647
EIS Alternative 1R: Preferred Alternative (Medium Intensity Reuse)		
Employment Center	354.7	4,202
McKinney Act/Public Benefit Conveyance	To be determined	1,708
Army Reserve Training Center	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Open Space	51.6	0
Total	486.9	6,000
EIS Alternative 2: Heavy Commercial/Industrial (Medium-high Intensity Reuse)		
Heavy Commercial and/or Warehouse	292.3	7,454
Industrial	114.0	2,132
Army Reserve Training Center	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Total	486.9	9,676

Table 2-1.
Actual Land Use and Employment as of July 1995,
and as Considered in the Disposal and Reuse Environmental Impact Statement

User	Gross Acres	Employment
EIS Alternative 3: Heavy Commercial (Medium Intensity Reuse)		
Heavy Commercial and/or Warehouse	132.4	3,376
Army Reserve Training Center	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Caretaker	273.9	80
Total	486.9	3,546
EIS Alternative 4: Office/Administrative (Low Intensity Reuse)		
Office/Administrative	27.9	1,130
Army Reserve Training Center	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Caretaker	378.4	80
Total	486.9	1,300
EIS Alternative 5: No Action/Caretaker		
Army Reserve	39.1	50
California Army National Guard	22.3	20
U.S. Navy/Marine Corps Reserves	19.2	20
Caretaker	406.3	80
Total	486.9	170

Table 2-2. EBS Initial Investigation Designations, Study Areas, and Schedule

Investigation Group	EBS Study Areas	Date Due to ACOE & Depot	
		Draft	Final
1	4 (Building 150); 26 (Bays 1&2), 27 (Bay 1), 54 and 55 (1118th Signal Battalion)	11/9/93	12/13/93
2	27 (Bays 2 through 6), 31, 32, 63, and 68	12/20/93	1/21/94
3	12, 14, 29, 84, 85, and 86	1/10/94	2/11/94
4	2, 3, 5, 6, 7, 8, and 9	1/31/94	3/4/94
5	19, 20, 21, 22, 23, 24, 25, and 26 (Bays 3 through 6)	2/21/94	3/25/94
6	30, 33, 34, 35, 36, 37, 38, 60, 69, and 70	3/14/94	4/15/94
7	61, 62, 64, 65, 66, 67, 71, and 75	4/4/94	5/6/94
8	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 56, 72, 73, 76, and 77	4/25/94	5/27/94
9	78, 79, 80, 81, 82, 83, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, and 98	5/16/94	6/17/94
10	1, 10, 11, 13, 15, 16, 17, 18, 28, 57, 58, 59, and 74	6/6/94	7/8/94

Table 2-3. Initial Estimated Building Vacancy Dates

Bldg. No.	Description	Sq. Ft.	Vacancy Date	Former Occupant	Remarks
247	Vacant	14,800	March 1, 1993	LA DLA	Laid away
600	Family Housing	2,343	May 1, 1993	LA CO	Laid away
S-384	Gas Station	252	October 1, 1993	SADA	Currently ready for LA
S-603	Vacant	1,663	May 1, 1993	LA CO	Awaiting asbestos survey
S-604	Detached Garage	1,320	May 1, 1993	LA CO	Laid away
T-666	Vacant	2,000	May 1, 1993	LA SAAD	Laid away
423	Electrical Maintenance Shop	27,112	February 1, 1994	Maintenance	Currently ready for LA
W257-2		43,560	February 1, 1994	Maintenance	Currently ready for LA
249	Flammable Materials Storage	4,100	March 1, 1994	DLA	Currently ready for LA
322	Flammable Materials Storage	72	March 1, 1994	Maintenance	
323	Flammable Materials Storage	72	March 1, 1994	Maintenance	
330	Firefinder	18,919	March 1, 1994	Maintenance	Currently ready for LA
419	Flammable Materials Storage	144	March 1, 1994	Maintenance	
420	Plating Shop	19,954	March 1, 1994	Maintenance	
547	Gazebo	406	March 1, 1994	Maintenance	
552	Flammable Materials Storage	144	March 1, 1994	Maintenance	
S-259	Gazebo	406	March 1, 1994	Maintenance	
S-319	Gazebo	406	March 1, 1994	Maintenance	
S-422	Electrical Maintenance Shop	1,500	March 1, 1994	Maintenance	
S-439	General Purpose Administration	13,276	March 1, 1994	Maintenance	Currently ready for LA
S-553	General Purpose Warehouse	1,200	March 1, 1994	SADA	
W-248	Bays 1-6	261,360	March 1, 1994	Maintenance	
W257	Bays 3-6	174,240	March 1, 1994	Maintenance	
142	Shower House	940	April 1, 1994	SADA	
310	Flammable Materials Storage	400	April 1, 1994	Maintenance	
352	Boiler Plant	4,350	April 1, 1994	SADA	
W255	Bays 3-5	130,680	April 1, 1994	DLA	
W255-6		47,190	April 1, 1994	DLA	
109	Pump House	2,503	June 1, 1994	ABD	Awaiting asbestos survey
S-154	Medical Clinic	6,622	June 1, 1994	SADA	
S-204	General Purpose Storage	1,024	June 1, 1994	ABD	Expect ground contamination
T-668	Physical Fitness Center	2,000	June 1, 1994	SADA	
T-670	Physical Fitness Center	2,000	June 1, 1994	SADA	
T-672	Morale Support	6,676	June 1, 1994	SADA	
T-683	Snack Bar	100	June 1, 1994	SADA	
452	Box & Crate Shop	8,000	July 1, 1994	Maintenance	Battery shop, expect environmental action
S-140	Open Dining	10,347	July 1, 1994	SADA	
S-143	Snack Bar	112	July 1, 1994	SADA	

Table 2-3. Initial Estimated Building Vacancy Dates

Bldg. No.	Description	Sq. Ft.	Vacancy Date	Former Occupant	Remarks
S-149	Post Restaurant	14,078	July 1, 1994	SADA	
301	IWTP	1,540	August 1, 1994	EVMD	
416	IWTP	3,486	August 1, 1994	EVMD	
215	Flammable Materials Storage	4,000	September 1, 1994	DLA	
220	General Purpose Warehouse	5,000	September 1, 1994	DLA	
254	Flammable Materials Storage	72	September 1, 1994	DLA	
256	Flammable Materials Storage	144	September 1, 1994	DLA	
300	Electrical Maintenance Shop	12,053	September 1, 1994	TMDE	Radiation decontamination in progress
411	Battery Shop	437	September 1, 1994	DLA	
415	Hazardous Materials Storage	10,196	September 1, 1994	DLA	
555	Electro-Optics Facility	80,162	September 1, 1994	Maintenance	Interim use beyond February 1994 by USAF
S-131	Gazebo	406	September 1, 1994	SADA	
S-205	RR Equipment Maintenance	2,656	September 1, 1994	DLA	
S-237	Gazebo	406	September 1, 1994	DLA	
S-240	General Purpose Storage	4,608	September 1, 1994	DLA	
S-241	General Purpose Storage	4,608	September 1, 1994	DLA	
S-243	Flammable Materials Storage	2,000	September 1, 1994	DLA	
S-424	General Purpose Storage	28,560	September 1, 1994	DLA	
S-459	General Purpose Administration	192	September 1, 1994	DLA	
S-460	Public Toilet	192	September 1, 1994	SADA	Provides service to DLA
S-557	General Purpose Storage	25,200	September 1, 1994	DLA	
S-558	General Purpose Storage	25,200	September 1, 1994	DLA	
W242	Bays 1-5	237,659	September 1, 1994	DLA	
W244	Bays 1-3	134,310	September 1, 1994	DLA	
W244-4		43,560	September 1, 1994	DLA	Expected radiation
W244-5		43,560	September 1, 1994	DLA	Expected radiation
W244-6		43,560	September 1, 1994	DLA	
W246	Bays 1-4	177,870	September 1, 1994	DLA	
W251-1		43,560	September 1, 1994	DLA	
W251-5		43,560	September 1, 1994	NAVB	
W253-1		43,560	September 1, 1994	DLA	Operation Santa Claus
W253	Bays 2-4	130,680	September 1, 1994	DLA	
150	Post HQ	111,035	October 1, 1994	SADA	In use: Depot Administration, TASA, Contractor
245	ADP Building	21,200	October 1, 1994	DOIM	In use: DOIM
250	Power Generator Housing	190	October 1, 1994	DOIM	In use: DOIM
321	Street Cleaning Facility	600	October 1, 1994	Maintenance	In use through Oct. 1994
325	Laboratory, General Purpose	5,612	October 1, 1994	SADA	In use: EVMD testing

Table 2-3. Initial Estimated Building Vacancy Dates

Bldg. No.	Description	Sq. Ft.	Vacancy Date	Former Occupant	Remarks
353	Learning Resources Center	4,930	October 1, 1994	SADA	In use: Depot Administration, Safety, Contr. Env.
426	Can Crushing Facility	1,170	October 1, 1994	EVMD	In use, close after DLA departs
S-236	Gazebo	406	October 1, 1994	DOIM	Adjacent to B-245, DOIM
S-366	General Instruction Building	1,920	October 1, 1994	SADA	In use: DPCAS
221	Scale House	120	December 1, 1994	DLA	In use through Dec. 1994
320	Electric Maintenance Shop	163,249	December 1, 1994	Maintenance	Vacation date delay due to RAD decontamination
W246-5		43,560	December 1, 1994	DLA	In use: Equipment turn-in staging area
W246-6		43,560	December 1, 1994	DLA	In use: Equipment turn-in staging area
346	Flammable Materials Storage	96	January 1, 1995	SADA	In use: Vehicle Maintenance Shop
347	Flammable Materials Storage	144	January 1, 1995	SADA	In use: Vehicle Maintenance Shop
348	Vehicle Maintenance Shop	54,720	January 1, 1995	SADA	In use
S-130	Sentry Station	240	March 1, 1995	SADA	In use: Depot truck gate house
W242-6		43,560	March 1, 1995	DLA	DLA transportation
W251-2		43,560	March 1, 1995	DLA	Interim use by DRMO
W251-3		43,560	March 1, 1995	DLA	Interim use by DRMO
W251-4		43,560	March 1, 1995	DLA	Interim use by DRMO
W253-5		43,560	March 1, 1995	DLA	Interim use by DRMO
W253-6		47,190	March 1, 1995	DLA	Interim use by DRMO
699	Exchange Services Station	1,380	April 1, 1995	SADA	UST removal required, Building close April 1994
412	Hazardous Materials Storage	13,500	May 1, 1995	EVMD	RCRA permit, hazardous materials storage area
413	Flammable Materials Storage	72	May 1, 1995	SADA	In use: EVMD flammables storage
427	Fixed Laundry	300	May 1, 1995	EVMD	In use: Contractor environmental clean-up
S-425	General Purpose Storage	28,560	May 1, 1995	SADA	In use: Base support contractor
S-437	General Purpose Administration	192	May 1, 1995	SADA	In use: Pest control mixing area
S-438	Public Toilet	192	May 1, 1995	SADA	In use: Pest control mixing area
372	Environmental	1,995	July 1, 1995	EVMD	In use: Government environmental
S-351	Engineer Administration	4,065	July 1, 1995	SADA	In use: Government/Contractor Facilities Engineering
W251-6		43,650	July 1, 1995	TASA	In use by Depot Administration after October 1994
124		2,790,826			

Table 2-3. Initial Estimated Building Vacancy Dates

Bldg. No.	Description	Sq. Ft.	Vacancy Date	Former Occupant	Remarks
Caretaker Force After July 1, 1995					
164	General Purpose Administration	2,160	Caretaker	SADA	Depot Administration
349	Flammable Materials Storage	72	Caretaker	SADA	
361	Facilities Engineering Facility	960	Caretaker	SADA	
370	Flammable Materials Storage	1,250	Caretaker	SADA	
378	Flammable Materials Storage	72	Caretaker	SADA	
379	Flammable Materials Storage	72	Caretaker	SADA	
601	Skill Development Center	4,072	Caretaker	SADA	In use, storage adjacent to groundwater treatment plant
607	Flammable Materials Storage	72	Caretaker	SADA	
S-152	Sentry Station	120	Caretaker	SADA	
S-153	Security Administration	3,761	Caretaker	SADA	Depot Administration
S-354	Facilities Engineering Storage	4,480	Caretaker	SADA	
S-355	Facilities Engineering Maintenance Shop	9,966	Caretaker	SADA	
S-358	Flammable Materials Storage	1,600	Caretaker	SADA	
S-360	Facilities Engineering Maintenance Shop	2,580	Caretaker	SADA	
S-362	General Purpose Warehouse	4,109	Caretaker	SADA	
15		35,346			
Interim Use Army Reserve					
180	ARTC	51,710	Interim Use	RE	
181	AR Vehicle Maintenance Shop	3,700	Interim Use	RE	
183	Oil Storage	120	Interim Use	RE	
184	Dispatch	113	Interim Use	RE	
187	Open Warehouse Storage	195	Interim Use	RE	
188	Flammable Materials Storage	72	Interim Use	RE	
380	Flammable Materials Storage	72	Interim Use	RE	
383	Sentry Station	216	Interim Use	RE	
S-382	Vehicle Maintenance Shop	6,453	Interim Use	RE	
S-386	Gazebo	406	Interim Use	RE	
S-393	Sentry Station	240	Interim Use	RE	
W255-1		58,572	Interim Use	RE	
W255-2		43,560	Interim Use	RE	
W257-1		54,410	Interim Use	RE	
14		219,839			
Army Reserve Enclave					
650	Enlisted Barracks	39,429	September 1993	RE	
652	Administration	3,250	September 1993	RE	
662	High Tech. Center	23,085	September 1993	RE	

Table 2-3. Initial Estimated Building Vacancy Dates

Bldg. No.	Description	Sq. Ft.	Vacancy Date	Former Occupant	Remarks
669	Handball Court	2,371	September 1993	RE	
675	Shower House	951	September 1993	RE	
680	Exchange Branch	6,413	September 1993	RE	
681	Skill Development Center	1,020	September 1993	RE	
682	Open dining NCO	5,117	September 1993	RE	
S-667	Gazebo	406	September 1993	RE	
T-651	Administration & Supply	7,950	September 1993	RE	
T-653	Administration & Supply	8,829	September 1993	RE	
T-654	General Purpose Administration	720	September 1993	RE	
T-655	General Purpose Administration	1,200	September 1993	RE	
T-656	Military Personnel Building	1,200	September 1993	RE	
T-657	General Instruction Building	2,000	September 1993	RE	
T-658	General Instruction Building	2,000	September 1993	RE	
T-659	MARS Station	2,000	September 1993	RE	
T-660	Vacant	2,000	September 1993	RE	
T-663	Vacant	2,000	September 1993	RE	
T-664	General Instruction Building	2,000	September 1993	RE	
T-665	Public Toilet	792	September 1993	RE	
21		114,733			
California National Guard Enclave					
677	Administration	3,200	September 1993	CNG	
S-689	General Purpose Storage	360	September 1993	CNG	
S-690	General Purpose Administration	3,930	September 1993	CNG	
S-691	General Purpose Storage	720	September 1993	CNG	
S-692	General Purpose Administration	3,930	September 1993	CNG	
S-693	General Purpose Storage	720	September 1993	CNG	
S-694	General Purpose Administration	3,930	September 1993	CNG	
S-695	General Purpose Storage	360	September 1993	CNG	
S-698	Sentry Station	72	September 1993	CNG	
T-640	Fixed BBQ	320	September 1993	CNG	
T-641	Fixed BBQ	320	September 1993	CNG	
T-642	Fixed BBQ	320	September 1993	CNG	
12		18,182			
186	DEPOT TOTAL	3,178,926			

Table 2-4. History of Legal Agreements/Interim Leases

Entity Requesting Agreement/Lease	Building No./Study Areas	Date of Agreement or Duration
California Emergency Foodlink, Inc., License	Buildings 221, 243, 244, 245, 246, and 247 (Study Areas: most of 14, 15, and 16; all of 21 and 22; and a portion of 23)	31 March 1994 Ongoing
City of Sacramento, Interim lease	Study Areas 2 through 7, 19, 20, 24 through 27, 52, 73, and 85	14 December 1994 to 15 March 1995
Operation Santa Claus, License	Building 253 (Bay 1)	11 April 1994 to 7 November 1994
California District 7 Little League, License	Baseball field in Study Area 96	4 October 1994 to 30 January 1995
Packard Bell, Right-of-Entry	Building 150 (Part)	11 October 1994 to 14 December 1994
Electric utility easements	Various locations	To 1 March 1995
U.S. District Court, Eastern District, Permit	Building 257 (Part of Bay 2)	21 April 1994 to 21 November 1994
MOA between the U.S. Department of the Army and the City of Sacramento	371 acres for the City of Sacramento	27 February 1995
U.S. Department of the Army, Quitclaim Deed	306 acres for the City of Sacramento	Delivered 3 March 1995 Recorded 5 April 1995

Table 2-5. Summary of Conveyance Requests

Requestor	Method of Conveyance	Proposed Use	Specific Area Requested	Approved by Federal Sponsor?
U.S. Navy/Marine Corps	DoD Transfer	Reserve Training Center	Southwest corner (EBS Study Area 91)	Not Applicable
U.S. Dept. of Agriculture, Forest Service	Federal Transfer	Administrative	EBS Study Areas 2, 3, 4, 5, 6, and 7	Not Applicable Withdrawn
California Emergency Foodlink	McKinney Assignment	Food storage and training	Buildings 222, 244, 245, 246 and 247	Yes—HHS. Assignment due in 1995.
City of Sacramento Fire Department	Public Benefit Transfer	Fire Department Training Facility	Buildings 315, 249, 300, 412, parking area (18 acres)	Yes—Dept. of Education. Withdrawn
California State University Sacramento Foundation	Public Benefit Transfer	Manufacturing Technology Education Center, Insurance Institute, Archaeological Repository and Information Center	Buildings 251 and 555 with underlying land	Yes—Dept. of Education. Relocated to Buildings 320 and 423. Assignment due in 1995
Los Rios Community College District	Public Benefit Transfer	District wide consolidated storage and warehousing facility	Building 257, Bay 3 (or similar building with 50,000 sq ft of warehouse space)	Yes—Dept. of Education. Withdrawn
City of Sacramento	Economic Development Conveyance	Private Development	371 acres	N/A
Operation Santa Claus	McKinney Assignment	Food storage and distribution	One bay of warehouse 253	No
Sacramento Housing Alliance	McKinney Assignment	Homeless	Buildings 140, 149; part of 150, 600, 603, 604; four tracts of undeveloped land	No
Vietnam Veterans	McKinney Assignment	Job training and support for homeless veterans	Buildings 149, 154, 140, and 12 acres	Yes for Buildings 149 and 154 only. HHS. Withdrawn.
California State Department of Corrections	Public Benefit Discount	Department of Corrections Reception Center	Approximate location on about 30 acres	Verbal OK— Pending written approval/Dept. of Justice. Withdrawn
California State Department of Transportation	Public Benefit Discount	Motorized Equipment Training Academy and Kingvale Maintenance Academy	Approximately 43 acres	Yes—Dept. of Transportation. Withdrawn.
State of California Employment Development Department	Negotiated Sale	Consolidated warehouse facility and mass mail/computer operations print facility	Warehouse location; 100,000 sq.ft. warehouse space and 75,000 sq.ft. administration space	Not Applicable

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
1	17.0	High	102 103 107 109 130	Sand Trap Water Meter and Valve Box Reservoir Water Pump Guard House	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
2	7.8	High	140 141 142 143 Parking Lot 10	Officer's Club Outdoor Swimming Pool Bath House Snack House Parking Lot	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
3	8.1	High	149	Post Restaurant/ Credit Union	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
4	4.6	High	150	Post HQ Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
5	1.4	High	152 153 155 156 163 164 165	Guard House Administration Building Cooling Towers Generator Generator Visitor Center Generator	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
6	1.0	High	154	Clinic	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
7	7.0	High	Parking Lot 1	Parking Lot	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
8	5.4	High	180 186 Parking Lot 12	Army Reserve Center Flagpole Parking Lot	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
9	2.8	High	181 182 183 184 185 187 188	Army Reserve Center Grease Racks Oil House Dispatch Building Wash Facility Center Open Warehouse Facility Hazardous Waste Facility	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
10	2.8	High	Parking Lot 2	Parking Lot	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
11	0.9	High	220	General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
12	0.7	Medium	204 205	Storehouse Spare Parts Locomotive Repair	Commercial/Industrial and Open Space	8	December 1995	Quitclaim Deed	City of Sacramento
13	34.0	High	Open Area	Railroad Tracks	Open Space	None	February 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
14	2.0	High	221 243 250	Scale House Flammable Material Storehouse Emergency Standby Power Plant removed in 1994	Food storage and transfer and Open Space	None	February 1995	Assignment to HHS	McKinney Act transfer to HHS for conveyance to California Emergency Foodlink, Inc.
15	2.0	High	245	ADP Building	Food storage and transfer and Open Space	None	February 1995	Assignment to HHS	McKinney Act transfer to HHS for conveyance to California Emergency Foodlink, Inc.
16	1.7	High	247	Cold Storage Warehouse	Food storage and transfer and Open Space	None	February 1995	Assignment to HHS	McKinney Act transfer to HHS for conveyance to California Emergency Foodlink, Inc.
17	0.8	High	215	Flammable Material Storehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
18	0.7	High	249	Flammable Material Storehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
19	0.7	High	240 241	Storage Shed General Purpose Storage Shed	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
20	10.7	High	242	General Purpose Warehouse	Administrative/Warehouse	None	February 1995	Quitclaim Deed	City of Sacramento
21	11.4	High	222	Compressed Air Plant	Food storage and transfer	None	February 1995	Assignment to HHS	McKinney Act transfer to HHS for conveyance to California Emergency Foodlink, Inc.
			244	General Purpose Warehouse					

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
22	12.0	High	246	General Purpose Warehouse	Food storage and transfer	None	February 1995	Assignment to HHS	McKinney Act transfer to HHS for conveyance to California Emergency Foodlink, Inc.
23	11.1	High	248	General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
24	12.2	High	251	General Purpose Warehouse	Education/Training	None	February 1995	Quitclaim Deed	City of Sacramento
25	12.9	High	253	General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
26	13.0	High	255	General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
27	12.2	High	254 256 257	Flammable/Hazardous Materials Storage Shed Flammable/Hazardous Materials Storage Shed General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
28	0.8	Medium	300	TMDE Electrical Maintenance Shop	Commercial/Industrial	5	December 1995	Quitclaim Deed	City of Sacramento
29	1.7	High	301 303 308	Pump House Clarifier Clarifier	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
30	1.5	Medium	Parking Lot D	Parking Lot	Commercial/Industrial	Ground-water	December 1995	Federal Transfer to Dept. of Education	Transfer to Dept. of Education for Public Benefit Discount Conveyance to CSUS

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
31	0.2	Medium	310	Flammable Material Storage	Commercial/Industrial	Ground-water	December 1995	Federal Transfer to Dept. of Education	Transfer to Dept. of Education for Public Benefit Discount Conveyance to CSUS
32	5.9	High	315 316 320 322	Cyanide Sump Acid Sump Electrical Maintenance Shop Non-hazardous Material Storage Facility	Commercial/Industrial	3 & 10	December 1995	Federal Transfer to Dept. of Education	Transfer to Dept. of Education for Public Benefit Discount Conveyance to CSUS
33	0.2	High	321 Picnic Area	Steam Cleaning Facility Area North from Building 321	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
34	1.6	High	Open Area	North from Building 321	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
35	0.5	High	325	Laboratory	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
36	1.5	High	330	Electronic Maintenance Shop	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
37	3.3	High	346 347 348	Flammable Materials Storehouse Flammable Materials Storehouse Motor Repair Shop	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
38	2.9	High	Open Area	North from Building 348	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
39	0.8	High	351	Engineering Administration Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
40	0.6	High	349 352 365	Hazardous Materials Storage Shed Boiler Plant Generator	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
41	0.7	High	353	Learning Resource Center	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
42	0.8	High	354	Facilities Engineering Storehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
43	1.5	High	355 361	Facilities Engineering Maintenance Shop Paint Booth	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
44	0.2	High	366	Modular Classroom Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
45	0.8	High	367 369 370	Storage Bin Flammable Material Storage Flammable Storage Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
46	0.6	High	Open Area	East from Building 354	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
47	0.4	High	358	Flammable Material Storage	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
48	0.5	High	357 359	General Storehouse (Temporary Facility) Flammable Material	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
49	0.6	High	356 362	Temporary General Storehouse General Purpose Warehouse	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
50	0.4	High	360 364	Facilities Engineering Maintenance Shop Wash Facility	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
51	0.1	High	Pesticide Mixing Area	Pesticide Mixing Area	Commercial/Industrial	6	February 1995	Quitclaim Deed	City of Sacramento
52	4.2	High	Open Area	Northeast from Building 372	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
53	0.4	High	372	Office Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
54	3.2	High	379 380 381	Portable Hazardous Material Storage Container Portable Hazardous Material Storage Container Wash Facility Center	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
55	1.6	High	382 383	Vehicle Maintenance Shop Guard House	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
56	2.0	High	384	Gas Station & Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
57	3.6	Medium	Open Area 302	West from Parking Lot 3 and Building 412 Sewage Pump	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
58	2.6	Medium	Parking Lot 3	Parking Lot	Commercial/Industrial	11	December 1995	Quitclaim Deed	City of Sacramento
59	0.8	Medium	412	RCRA Hazardous Waste Container Storage Area	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
60	1.0	Medium	Open Area	West of Building 420	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
61	0.8	Medium	415	Hazardous Materials Storage Facility	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
62	0.7	Medium	Open Area 411	South from Building 415 Battery Acid Disposal Facility	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
63	1.4	High	413 416 418 420 427	Hazardous Materials Storage Shed Industrial Wastewater Treatment Plant (IWTP) Generator Electrical Maintenance Plating Shop Hazardous Waste Recycling Facility	Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
64	0.2	High	Open Area	South of Building 420	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
65	0.2	High	426	Can Crushing Facility	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
66	0.1	High	Open Area	South of Building 426	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
67	1.0	High	422	Shelter Rain Test Facility	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
68	1.4	High	423	Electrical Maintenance Shop	Commercial/Industrial	None	December 1995	Federal Transfer to Dept. of Education	Transfer to Dept. of Education for Public Benefit Discount Conveyance to CSUS
69	2.2	High	439	Electrical Maintenance Shop	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
70	2.2	High	424 425 458	Storage Shed Storage Shed General Purpose Shed	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
71	3.8	High	Open Area	South of Buildings 439 and 425	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
72	0.2	High	450	Substation/Transformer	Transformer substation	None	February 1995	Quitclaim Deed	City of Sacramento
73	12.6	High	Parking Lot 4 Open Area 393 459	Parking lot South from Parking Lot 4 Guard House Administration, General Purpose	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
74	1.5	Medium	530	Antenna Facility removed in 1994	Commercial/Industrial and Open Space	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
75A	1.9	Medium	417	Radar Test Facility removed in 1994	Commercial/Industrial	Ground-water	December 1995	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
75B	5.8	High	441 437 & 438	Aircraft Parking Area Pesticide Mixing Area	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
76	10.0	High	452 460 480	Electrical Maintenance Shop Public Toilet Loading Docks	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
77	1.9	High	557 558	Storage Shed, General Purpose Storage Shed, General Purpose	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
78	3.5	Medium	Open Area	North from Oxidation Lagoons	Commercial/Industrial and Open Space	Ground-water	December 1995	Quitclaim Deed	City of Sacramento
79	1.5	High	532	Test Probe Facility removed in 1993	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
80	17.0	Low	Oxidation Lagoons (IRP)	Open area	Commercial/Industrial and Open Space	1	December 1996	Quitclaim Deed	City of Sacramento
81A	10.55	Low	Open Area	North of Study Area 81B	Commercial/Industrial	None	December 1996	Quitclaim Deed	City of Sacramento
81B	9.25	High	Open Area	East of Oxidation Lagoons	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
82	1.9	High	Battery Disposal Well	Open area	Commercial/Industrial	7	February 1995	Quitclaim Deed	City of Sacramento
83	0.2	Low	606	Groundwater Treatment Plant	Open Space	4	December 1996	Quitclaim Deed	City of Sacramento

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
84	0.5	Low	601 602 607	Auto Hobby Shop Wash Facility Center Hazardous Materials Storage Shed	Open Space	None	December 1996	Quitclaim Deed	City of Sacramento
85	4.6	High	552 553 555	Temporary Hazardous Materials Storage Shed General Purpose Warehouse Electrical Maintenance Shop	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
86	3.5	High	Contractors Spoils Area	Open area	Commercial/Industrial	9	February 1995	Quitclaim Deed	City of Sacramento
87	22.0	High	Open Area	South of Bldg 555 and Contractors Spoils Area	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
88	6.0	Low	Burn Pits	Open area	Open Space	2	December 1996	Quitclaim Deed	City of Sacramento
89	5.9	Low	Open Area	East of the Burn Pits	Open Space	None	December 1996	Quitclaim Deed	City of Sacramento
90	1.4	Low	600 603 604	Commander's Residence Facility House Garage	Commercial/Industrial	None	December 1996	Quitclaim Deed	City of Sacramento
91	20.5	High	Navy/Marine Reserve Center	Navy/Marine Reserve Training Center	Training	None	February 1995	Federal Transfer	Navy/Marine Corps

Table 2-6. Reuse Parcel Data Summary

EBS Study Area	Approx. Acres	Priority	Building or Facility	Description	Actual or Proposed Reuse	Known Remediation Sites^①	Available Transfer Date	Transfer Mechanism	Recipient^②
92	0.3	High	Open Area	East of Building 681	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
93	0.3	High	Open Area	East of the Swimming Pool (674)	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
94	1.3	High	672	Morale Support Facility	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
95	0.5	High	666 668 670	General Instruction Building (Temporary Building) General Instruction Building (Temporary Building) Physical Fitness Center	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
96	8.0	High	Open Area	East of Building 662	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
97	0.7	High	Parking Lot 9	Parking lot	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
98	1.2	High	699	Gas Station Building	Commercial/Industrial	None	February 1995	Quitclaim Deed	City of Sacramento
900	11	High	None	Open land	Commercial/Industrial Open Space	None	February 1995	Quitclaim Deed	City of Sacramento

^① Locations are Remediation Action Sites numbered as shown in Figure 1-8.

^② Based on completed transfers, the MOA with the City of Sacramento, and transfers in process. Future transfer dates may vary.

REAL ESTATE SCREENING PROCESS (COMPLETION DATES)

Department of Defense (DoD)
McKinney Act
Real Estate Disposal Plan

EIS PREPARATION

Notice of Intent (NOI)
Draft Environmental Impact Statement (DEIS)
Final Environmental Impact Statement (FEIS)
Record of Decision (ROD)

RESTORATION PROCESS

Installation Restoration Program (IRP)
Community Environmental Response

BIOLOGICAL CONSIDERATIONS

Section 7 Endangered Species Consultation (ESC)

CULTURAL RESOURCES PROTECTION

State Historic Preservation Office Consultation
(SHPO) Section 106 Consultation

MOVEMENT OF PEOPLE AND FUNCTIONS

SACRAMENTO ARMY DEPOT CLOSED

CITY OF SACRAMENTO STRATEGY DEVELOPMENT

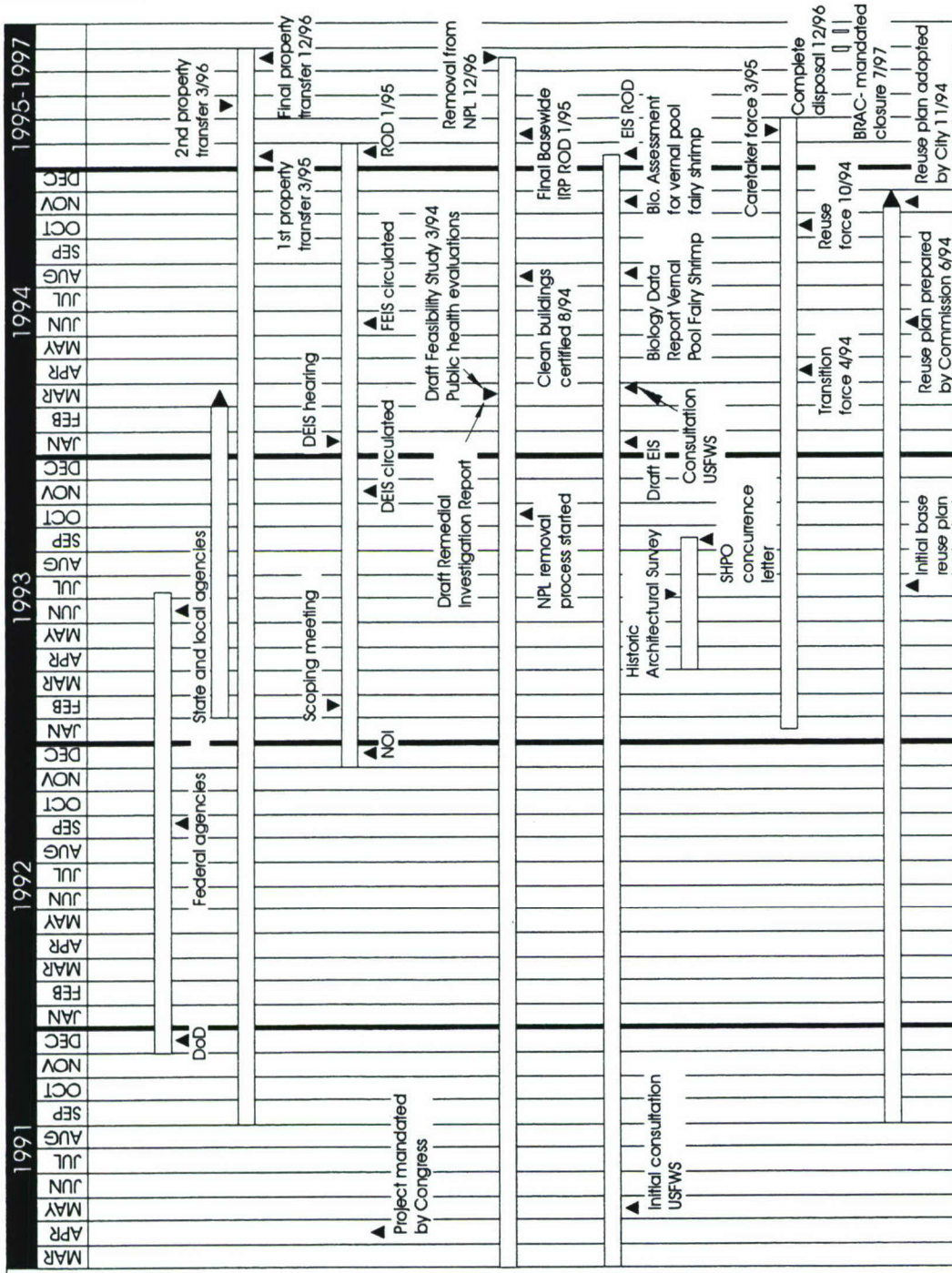


FIGURE 2-1

TIMELINE ASSOCIATED WITH
DISPOSAL AND REUSE PROCESS

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

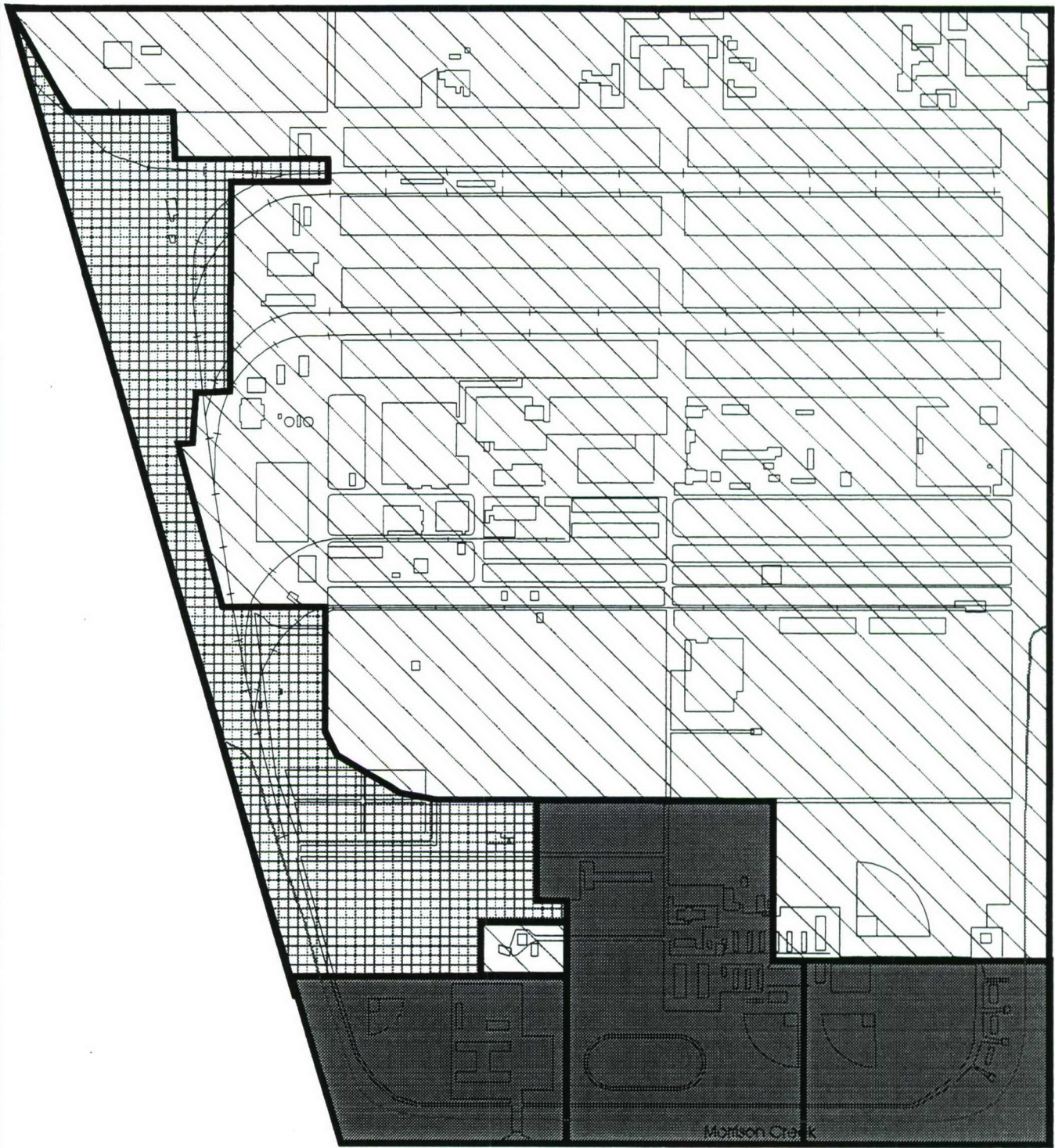


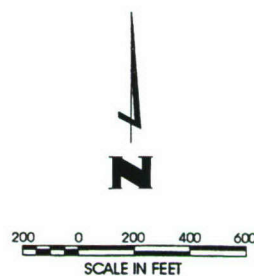
FIGURE 2-2

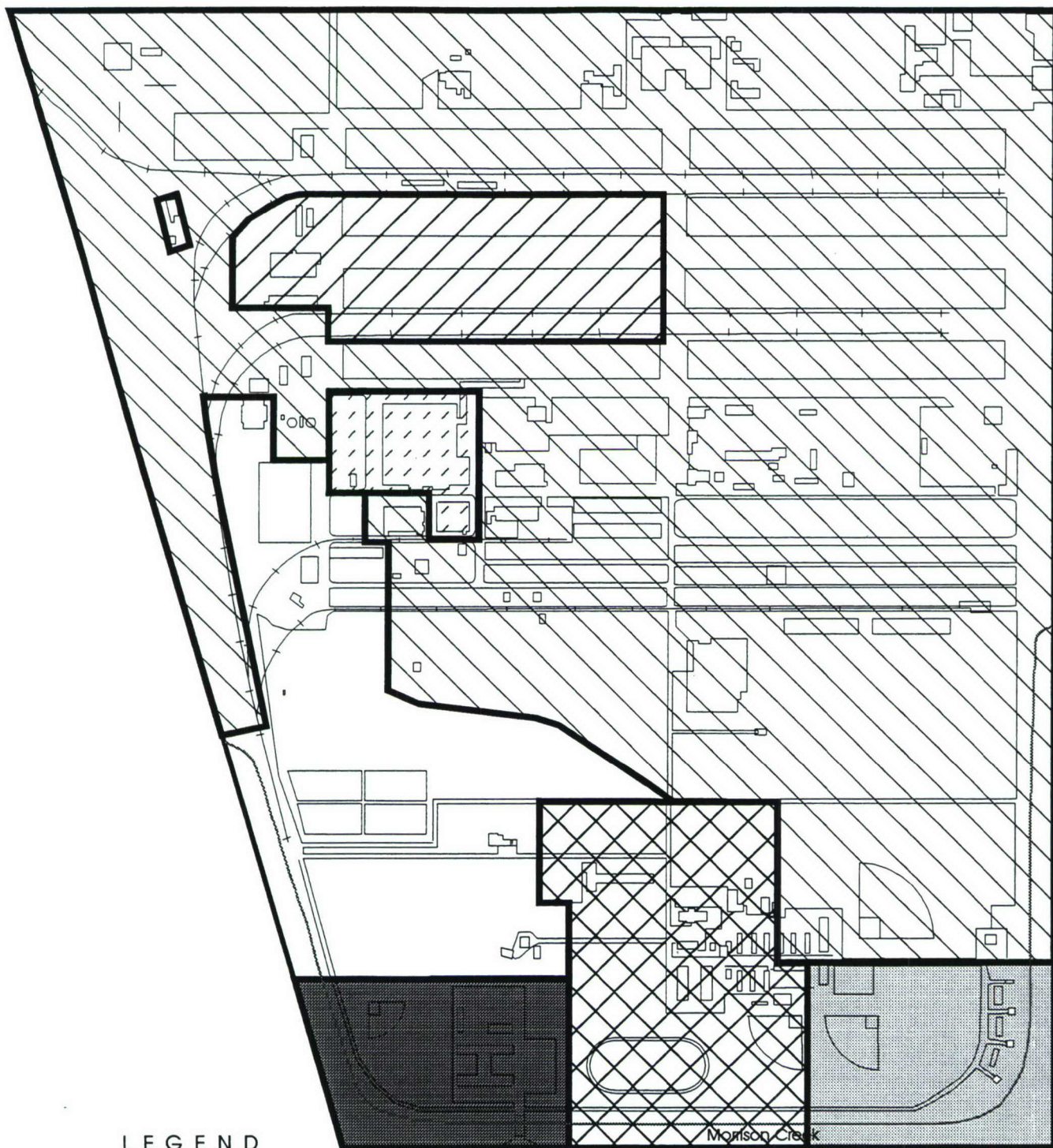
EIS ALTERNATIVE 1R:
PREFERRED ALTERNATIVE
(MEDIUM INTENSITY REUSE)

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

LEGEND

-  Employment Center
-  Open Space
-  Department of Defense





LEGEND

-  City of Sacramento
-  For transfer to the City of Sacramento when cleanup is complete
-  California Emergency Foodlink, Inc. (approved)
-  California State University at Sacramento Foundation (approved)
-  Navy/Marine Corps Training Center
-  U.S. Army Reserve
-  California Army National Guard



200 0 200 400 600
SCALE IN FEET

FIGURE 2-3

ACTUAL REUSE

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

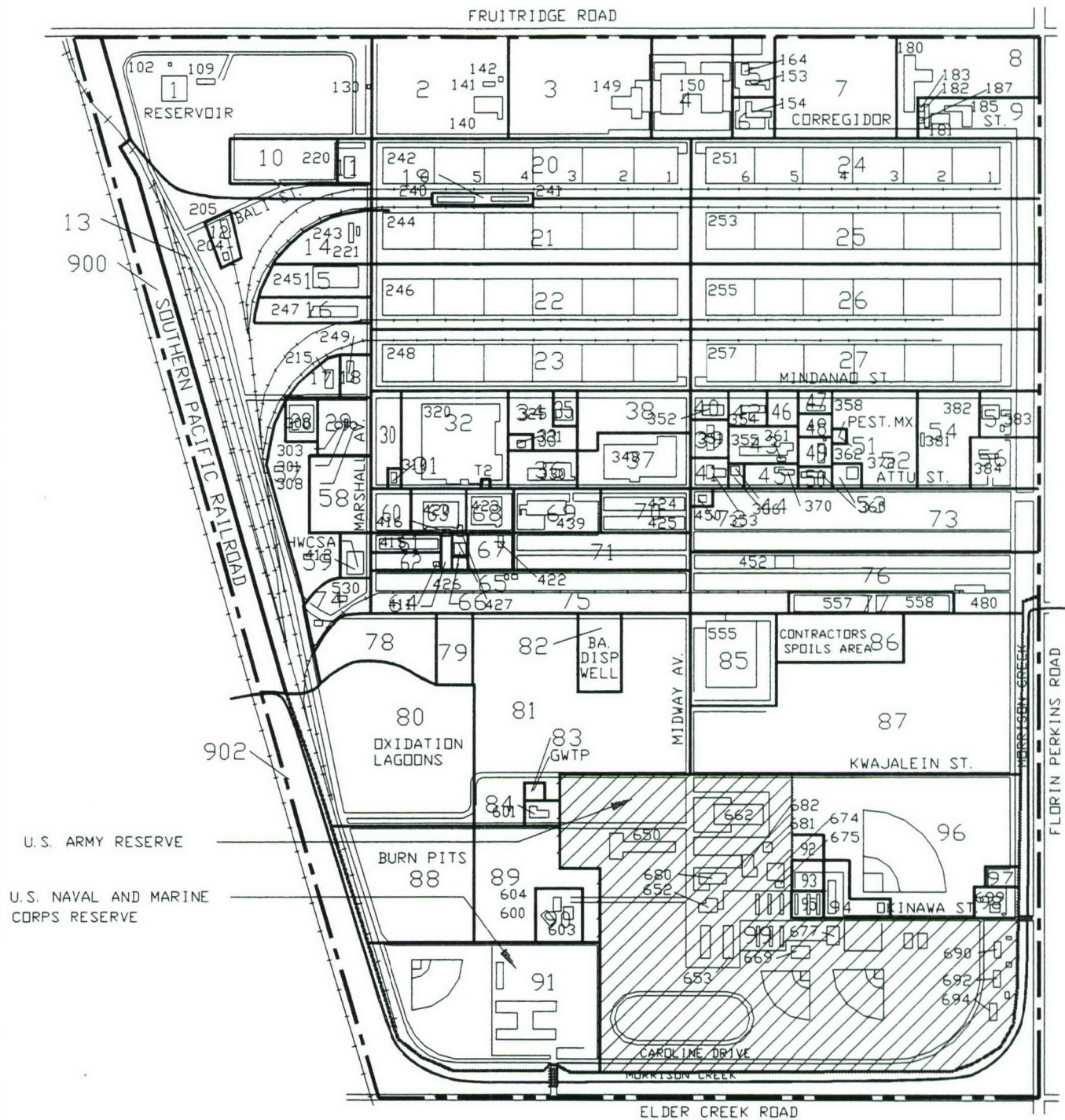
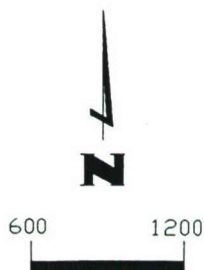


FIGURE 2-4

EBS STUDY AREAS

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

CERFA - Community Environmental Response Facilitation Act of 1992
 CX - Categorical Exclusion Under NEPA
 DOD - U.S. Department of Defense
 EA - Environmental Assessment
 EIS - Environmental Impact Statement
 FNSI - Finding of No Significant Impacts
 FOST - Finding of Suitability to Lease
 FOST - Finding of Suitability to Transfer
 HHS - U.S. Department of Housing and Human Services
 REC - Record of Environmental Consideration
 ROA - Report of Availability
 ROD - Record of Decision

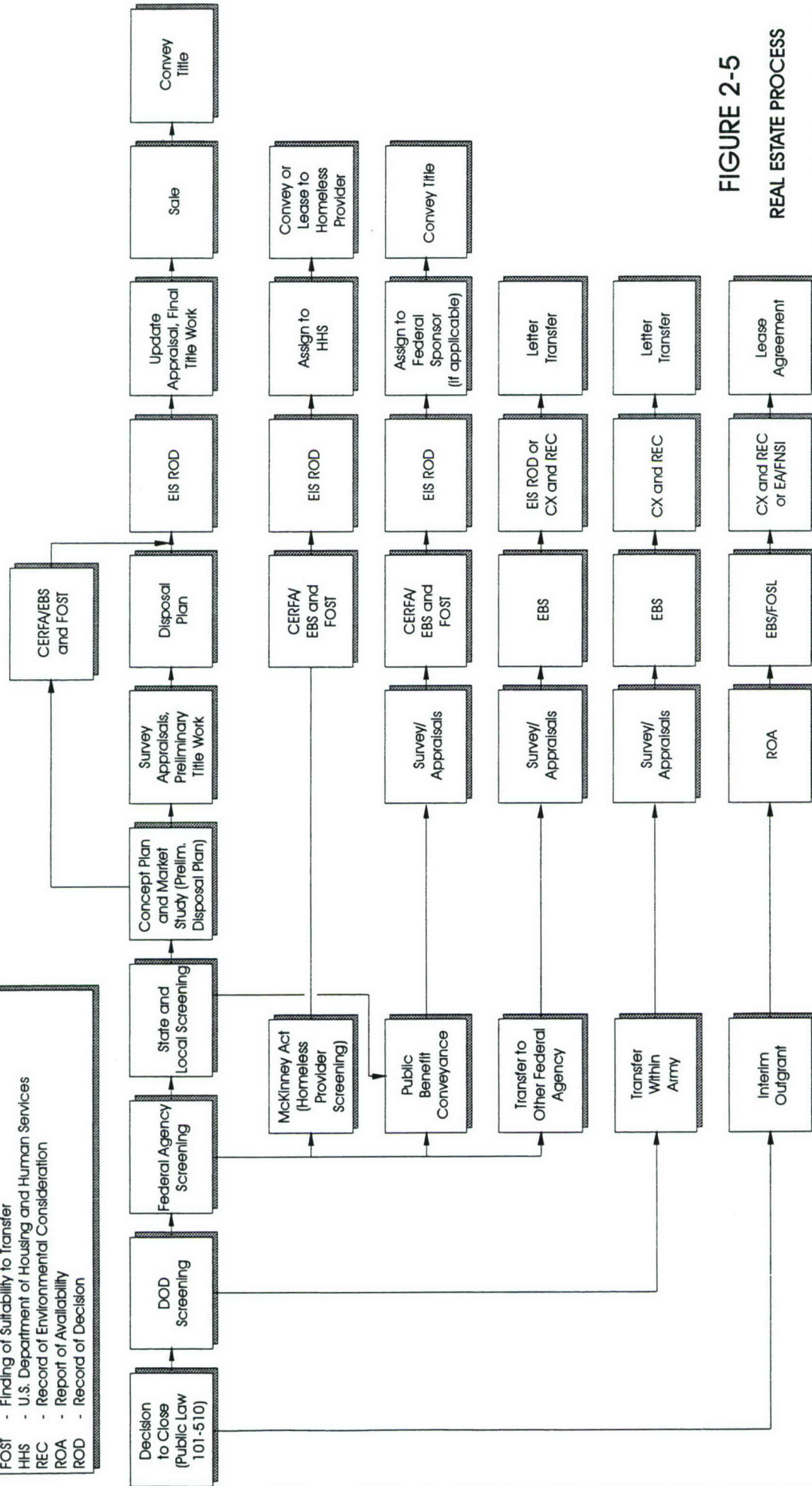
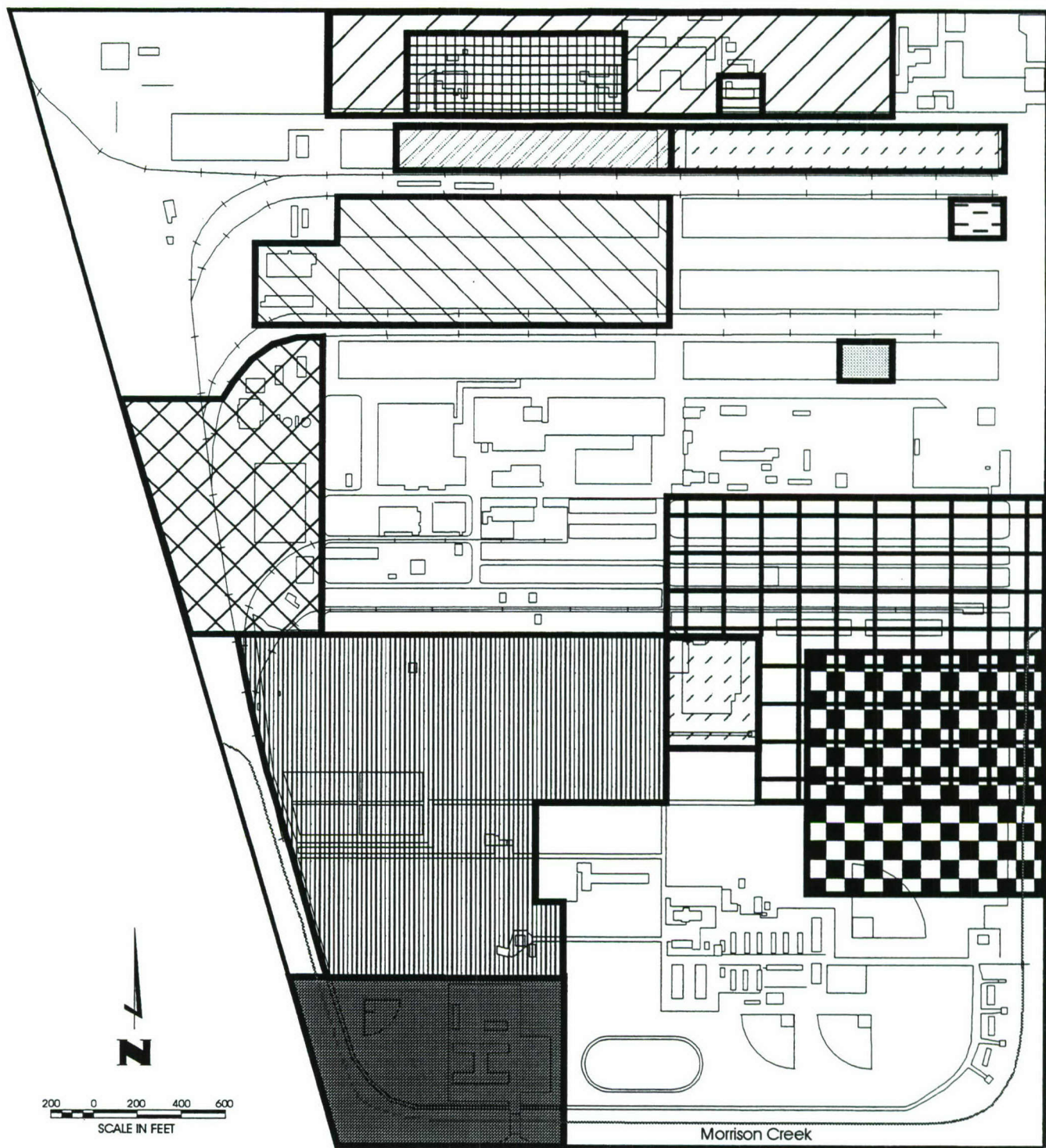


FIGURE 2-5

REAL ESTATE PROCESS

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

	Navy/Marine Corps Training Center		Sacramento Housing Alliance
	U.S. Dept. of Agriculture, Forest Service		Vietnam Veterans
	California Emergency Foodlink, Inc.		Vietnam Veterans/Sacramento Housing Alliance
	City of Sacramento Fire Department		California State Dept. of Corrections
	California State University at Sacramento Foundation		California State Dept. of Transportation
	Los Rios Community College District		State of California Employment Development Dept.
	Operation Santa Claus		

FIGURE 2-6

**PARCELS INITIALLY
REQUESTED FOR TRANSFER**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**

Chapter 3

Installation-Wide Environmental Program Status

3.1

Environmental Program History and Status

As part of the IRP at the Depot, a number of investigations were conducted to identify potential areas requiring further investigation. Some of these investigations were records searches; others included field investigations. A list of the reports that summarize the results of the early records evaluations and field investigations is provided in Table 3-1. A list of reports summarizing information collected during the RI/FS is included in Appendix B. An environmental timeline for the Depot is included as Figure 3-1.

3.1.1

Phase I Installation Restoration Program

The US Army Toxic and Hazardous Materials Agency (USATHAMA) initiated the Phase I IRP in 1979 with a records search of the use, storage, treatment and disposal of toxic and hazardous materials at the Depot. The purpose of investigation was to evaluate on-site waste disposal practices that may have resulted in conditions that could adversely affect human health or the environment. USATHAMA found on-site disposal methods potentially contributing to groundwater contamination beneath the Depot. These practices included the release of cyanide solutions from metal plating operations into a nearby leach field; treatment of sanitary and industrial wastes in four oxidation lagoons; destruction of refuse, oil, grease, radium paint and plating wastes in two burn pits; burial of batteries in an abandoned well; and the suspected burial of radioactive radar parts and radium components at an unknown location.

USATHAMA continued the investigation in 1980, contracting with Battelle Northwest, an environmental engineering consultant, to assess whether individual chemicals, radioisotopes, or other materials were migrating off-site. The survey of environmental contamination was completed in 1981. Three areas with heavy metal contamination were identified: soil in the Oxidation Lagoons, soil in the South Post Burn Pits, and sediments in portions of Old Morrison Creek. However, USATHAMA concluded that this contamination was not likely to migrate off-site.

In 1983, the Central Valley Regional Water Quality Control Board requested that additional sampling and analysis be conducted at the Depot. The Depot enlisted the assistance of the U.S. Army Environmental Hygiene Agency (AEHA) to evaluate groundwater conditions. AEHA conducted a records search and review of various sites as possible sources of groundwater contamination. The Oxidation Lagoons, South Post Burn Pits, and northwest perimeter of the Outdoor Waste Storage Area were identified as the areas with the greatest potential for contamination. At the same time, the State of California had discovered solvent contamination in a well located just off-site of the Depot's southwestern boundary. Additional wells were recommended to evaluate whether the groundwater contamination was coming from the Depot or from another off-site source.

In 1984, the Army installed groundwater monitoring wells to assess the extent and direction of groundwater contamination. Samples from wells in the southwest corner of the Depot revealed trichloroethene (TCE) contamination up to 95 parts per billion (ppb), significantly above the state action level of 4.5 ppb and the current state maximum contamination level (MCL) of 5 ppb for TCE in drinking water. Tetrachloroethene (PCE) contamination was also found at concentrations up to 25 ppb, exceeding the MCL of 5 ppb.

AEHA published its final report on the groundwater contamination survey at the Depot in 1989. It noted that nearly all of the quantifiable groundwater contamination at the Depot was located in the southwest quadrant of the facility, and was due to previous misuse of surface impoundments. AEHA provided a list of all known solid waste management units (SWMUs) at the Depot and classified them based on the location, type, size, waste characteristics, evidence of release, and potential migration pathways. AEHA made recommendations for sampling. Seven SWMUs were indicated as areas requiring remedial investigation (IRP sites 001, 002, 005, 006, 007, 008, and 009) (Table 3-2). An additional 14 sites were classified as SWMUs or RCRA Facility Assessment (RFA) sites (IRP sites 010 through 019, 021, 054). These sites required confirmation to determine if further investigation was necessary. Thirty sites were listed as non-SWMUs for which there was no evidence of release nor any reliable historical data to indicate that they would have a potential for contamination. Although AEHA concluded that the non-SWMU sites required no further action, the federal and state regulatory agencies later required a considerable amount of additional documentation, including sampling, at a number of these sites prior to the signing of the final Basewide ROD.

3.1.2

Phase II Installation Restoration Program

Following the discovery of groundwater contamination, the Army continued the investigation of environmental contamination in 1985. Soil samples indicated there was contaminated soil in the former Oxidation Lagoons, the Drainage Ditches, and the South Post Burn Pits. The Army contracted with Kleinfelder, Inc. in September 1985 to develop action plans to clean up soil and groundwater contamination at the Depot. The immediate goal of the Phase II IRP study was to confirm the findings of previous investigations and to assess groundwater contamination to evaluate cleanup alternatives. Six monitoring wells were installed and sampled, five in the northeast corner and one in the southwest corner. The well in the southwest corner was contaminated with VOCs. No heavy metals were found. By December 1986, a total of 25 monitoring wells had been installed on-site.

The Phase II IRP Soil and Groundwater Assessment, which involved the investigation of five areas of concern, was completed by January 1987. The South Post Burn Pits, Oxidation Lagoons, and Pesticide Mix Area were identified as areas with potential for significant soil contamination. The groundwater sample analyses indicated elevated volatile organic concentrations in wells downgradient of the South Post Burn Pits. Based on the results of the Phase II IRP investigations, the Depot proposed a strategy for completing the remedial investigation and feasibility study, and presented it to the regulatory agencies.

3.1.2.1

Federal Facilities Agreement

The information obtained during the Phase II IRP assessment formed the basis for the U.S. EPA's placement of the Depot on the NPL in July 1987. As a consequence of the NPL listing, in December 1988 the U.S. Department of the Army, U.S. EPA Region IX, and California Department of Health Services Toxic Substances Control Division (now known as Cal/EPA) signed a Federal Facilities Agreement (FFA) pursuant to the following authorities:

- Section 120 of CERCLA
- Sections 6001, 3008(h) and 3004(u) and (v) of RCRA
- NEPA
- The Defense Environmental Restoration Program
- California Health and Safety Code Division 20, Chapters 6.5 and 6.8, Sec. 102 and 25355.5(a)(1)(C)

The FFA required compliance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), CERCLA guidance and policy, RCRA guidance and policy, and applicable state laws. Under Section 7 of the FFA, the Army agreed to undertake, seek adequate funding for, fully implement and report on the following tasks:

- Conduct interim remedial actions
- Conduct remedial investigations and feasibility studies for areas of concern
- Review alternative remedial actions, implement remedial actions, operate and maintain the effectiveness of response actions at areas of concern
- Conduct all activities in accordance with applicable regulations
- Prepare a health and safety plan and a community relations plan

Under Section 16 of the FFA, all parties agreed to establish deadlines for the following draft primary documents:

- RI/FS Workplan
- Quality Assurance Project Plan
- RI Report
- Initial Screening of Alternatives
- FS Report
- Proposed Plans
- Records of Decision
- Community Relations Plan

The FFA gave priority to investigation of the following IRP sites: 001, 002, 005, 006, 008, 009, 021, and groundwater. As a result of site characterizations and risk assessments conducted on the priority sites, four sites (001, 002, 005, and groundwater) were addressed as Operable Units (OU), and remedial actions were expedited. These sites are listed in Table 3-3. OU RODs were signed for all four sites. The Basewide ROD, signed in January 1995, amended two of these OU RODs and set forth the final comprehensive remedial action for addressing soil and groundwater contamination at the entire facility. As of June 1995, remediation has been completed or is in progress at all sites, as discussed below.

3.1.3

Remediation

Remedial investigations were conducted at all areas on the Depot with known or suspected soil or groundwater contamination. Table 3-4 summarizes 54 areas that were investigated under the IRP program. The locations of the IRP sites on the Depot are shown on Figures 3-2 and 3-3 and may be cross referenced to the reuse alternatives (Figures 2-2 to 2-6). Remediation is completed or underway at all areas of concern. One of three approaches were used: 1) the site investigation indicated a risk to human health and the environment, so remedial alternatives were developed and a remedy was selected and implemented; 2) during the site investigation, the contamination was sufficiently removed to prevent risk to human health and the environment and no additional remediation was required; or 3) pilot tests were conducted at the site and residual contamination levels met cleanup goals so that additional remediation was not required. All remediation areas at the Depot are being cleaned up to meet residential standards. This minimizes the potential for future reuse incompatibility. Risk assessment associated with future land use at the Depot is presented in Table 3-5. The human health standards used are identified in Table 3-6.

The approaches selected for cleanup of soil and groundwater contamination have been documented either in OU RODs or in the Basewide ROD signed in January 1995. Sites that were handled as OUs were those that the Army believed presented the greatest risk to human health and the environment and for which remedy selection was expedited. OUs at the Depot included Tank 2, the Oxidation Lagoons, the South Post Burn Pits, and the southwest groundwater contamination.

The Basewide ROD included remedies for all areas of contamination that had not been addressed previously in the OU RODs. It also included any significant modifications to the remedies that had been selected in the OU RODs, thus making it unnecessary to prepare separate amendments to each OU ROD. The Basewide ROD was the final ROD for the entire Depot. It was used to "wrap up" all the environmental issues outstanding since the OU RODs were signed, including documentation of the "no action" sites.

3.1.3.1

Remedial Action—Southwest Groundwater Contamination OU

In 1988, The Depot proposed an interim remedial action system that included immediate installation of a groundwater extraction system on-site to prevent contamination of underlying aquifers and restrict further migration of contaminated groundwater off-site. The interim remedial action for groundwater was selected after the Army had conducted a detailed screening and feasibility study of four alternatives: air stripping, air stripping with carbon adsorption, carbon adsorption, and ultraviolet (UV) radiation/oxidation. UV radiation/oxidation was selected as the technology for implementation. Design of the system was completed in 1988 and construction was completed in 1989. The OU ROD for this remedy was signed in September 1989. Since the treatment plant began operating, the Army has conducted a quarterly sampling program to evaluate the nature and extent of groundwater contamination at the Depot. Additional monitoring wells have been installed, as needed. The final remedial action for groundwater, which will expand the pump and treat system to remediate off-site groundwater contamination, was addressed in the final Basewide ROD signed in January 1995.

3.1.3.2

Remedial Action—Tank 2 OU

In August 1986, OH Materials removed four underground storage tanks, including Tank 2, a 1,000-gallon storage tank used to store waste solvents. At the time of its removal, Tank 2 was in poor condition and empty. On-site monitoring wells were installed in the vicinity of the removed tank and soil sampling was conducted. VOCs were found in the soil around Tank 2 to a depth of about 31 feet, but no groundwater contamination was found.

The OU ROD for Tank 2 was signed in December 1991. By treating Tank 2 as an OU, the Army was able to evaluate remedial alternatives for cleanup of this site independently of the rest of the Depot and thus, expedite the cleanup. The selected remedy for the soil cleanup consisted of in situ soil ventilation with air emissions control. The cleanup of Tank 2 soil contamination was successfully completed in March 1993.

3.1.3.3

Remedial Action—Oxidation Lagoons OU

The Oxidation Lagoons, including the Drainage Ditches and a portion of Old Morrison Creek, were contaminated with heavy metals in the top 2 to 3 feet of soil. The remedial action selected consisted of excavation of contaminated soil, followed by on-site soil washing to remove the metals of concern, and placement of clean soil back into the excavation. The OU ROD for this remedial action was signed in September 1992.

The soil washing technology was considered an innovative method and was selected primarily because of its potential for achieving a clean closure for the site that would allow unrestricted future use of the property. To test its effectiveness and implementability, a large-scale pilot test study for the soil washing was completed at the site in 1993. It became apparent to the Army that

there would be significant difficulties with the reliability and cost of soil washing on a larger scale. Consequently, the Army proposed soil stabilization as an alternative remedy. This offered the benefit of using the same technology as was selected for the South Post Burn Pits. Due to regulatory changes promulgated in 1994, soil from the Oxidation Lagoons could be moved to the South Post Burn Pits, stabilized and placed without triggering the minimum technology requirements for a hazardous waste landfill. By placing stabilized soil at a single location on-site, the Army increased its ability to effectively manage and monitor the soil and to control future land use restrictions. This alternative remedy for the Oxidation Lagoons was selected in the Basewide ROD signed in January 1995.

3.1.3.4

Remedial Action—South Post Burn Pits OU

The South Post Burn Pits site investigation identified metals, volatile and semi-volatile organic compounds, PCBs, dioxins and furans in the soil in and around two former burn pits. These burn pits were determined to be the source of the groundwater contamination in the southwest area of the Depot. The remedial action selected for cleanup of the South Post Burn Pits area consisted of two parts: in-situ soil ventilation of the entire area of contamination to remove VOCs from the soil, followed by excavation of the two pits; stabilization of the excavated soil to treat non-volatile compounds, and backfill of the pits with the stabilized soil. The OU ROD for this remedy was signed in March 1993.

The soil ventilation portion of the remedy began in the Spring 1994 and was successfully completed in early 1995. The stabilization portion of the South Post Burn Pits soil remedy began in Summer 1995. The scope of the stabilization was expanded in the Basewide ROD signed in January 1995 to include soil from several other sites. The Army evaluated the feasibility of expanding the scope of the South Post Burn Pits stabilization by establishing a Corrective Action Management Unit (CAMU) to include contaminated soil from the Battery Disposal Well, the Building 300 Burn Pits and the Oxidation Lagoons. This allowed similarly contaminated soils to be combined into one remediation area that could be more effectively managed and monitored, and for which there would be increased control of future land use restrictions.

3.1.3.5

Pesticide Mix Area Investigation

The Pesticide Mix Area was a relatively small area covering approximately 20 square feet at the surface. Investigation of this site began in 1986. Additional sampling conducted in 1990 showed organochlorine pesticides were present in the soil, but the lateral extent of soil contamination had not been fully characterized. Consequently, the investigation continued in 1992. A drain well discovered in the area of contamination raised the concern of RWQCB and it requested that the Army assess potential impacts of pesticides on groundwater. The Army proposed to conduct additional vertical assessment beneath the drain well using an excavator to remove the drain well and collect soil samples beneath it.

The excavation of the drain well began in April 1993. During this investigation, a plastic drain line and concrete sump were also encountered. These were excavated along with the drain well and soil samples were collected to assess the vertical extent of contamination. Hydropunch samples were taken from the groundwater in the area. During the excavation, approximately 240 cubic yards of soil were removed from the site. Material from the excavation was stored in hazardous waste bins and ultimately transported off-site for disposal.

When the sides and bottom of the excavation were sampled for residual pesticide concentrations, the Depot found that the remaining levels did not pose a risk to human health or the environment. Therefore, the excavation was backfilled, compacted and graded. No remedial action was required at this site.

3.1.3.6

Battery Disposal Well Investigation

The Battery Disposal Well reportedly had been used to dispose of dry cell batteries. The well was partially excavated when the site was investigated in 1990. Soil samples indicated contamination with copper, lead, mercury and zinc. Batteries and debris found in the excavation were removed and stored on-site. The vertical extent of contamination was not fully assessed at that time due to the limited depth reach of the backhoe.

Soil borings were drilled in the Battery Disposal Well in 1992 to characterize the nature and vertical extent of contamination so that remedial alternatives could be developed. However, during the drilling a void space was encountered, and the Army decided to use a downhole video camera to observe conditions within the void before proceeding further. Debris was observed within the sidewalls of the void. An estimate of the depth of the well was made based on observations of the soil and debris within the void area and the soil information obtained from the borings. The lateral and vertical extent of soil contamination and debris still required further assessment.

In April 1993, the well was excavated to assess the lateral and vertical extent of contamination in the most cost effective and efficient manner. During the excavation, a steel casing was encountered 32 feet below ground surface. The casing was not removed, but soil samples were taken from the bottom and sides of the excavation. The excavation was backfilled and a boring was drilled through the casing to a depth of 55 feet so that samples could be taken and analyzed for metals contamination. In addition, two borings were drilled hydraulically downgradient of the Battery Disposal Well to a depth of about 80 feet so that water samples could be evaluated for metals contamination. The excavated material was stored in hazardous waste storage bins on-site.

The residual soil concentrations of metals in the Battery Disposal Well did not pose a significant risk to human health or the environment. In addition, groundwater samples did not contain metals at concentrations above background. Consequently, the regulatory agencies concurred that additional assessment of the site and remediation were not required. The Army proposed to dispose of the excavated soil by transporting it to the South Post Burn Pits for stabilization. This decision was documented in the Basewide ROD signed in January 1995.

3.1.3.7

Remedial Action-Building 300 Burn Pits

Building 300 was the site of two old burn pits that were used prior to the construction of the South Post Burn Pits. In the late 1950s, the old burn pits were closed and the material from the eastern burn pit was removed and transferred to the South Post Burn Pits. The western burn pit was not removed. In 1990, soil borings were drilled around Building 300 to evaluate the nature and extent of contamination. Debris and a variety of contaminants, including metals, volatile organics, semi-volatile organics, dioxins and furans, were detected in the western burn pit. The vertical extent of contamination extended to a depth of about 16.5 feet.

Additional investigation was conducted in 1992 to assess the lateral extent of contamination and debris. Remedial alternatives for the Building 300 Burn Pit area were evaluated and the Army selected excavation of contaminated soil, transport to the South Post Burn Pits and stabilization. The remedial action for the Building 300 Burn Pits is included in the Basewide ROD, which was signed in January 1995.

3.1.3.8

Parking Lot 3 Pilot Test

Parking Lot 3 is a rectangular-shaped, asphalt-covered area in the western central area of the Depot approximately 280 feet by 360 feet. In 1992, TCE was found in groundwater in the vicinity. Subsequent investigations into the source of the contamination indicated that VOCs probably entered the soil between 1946 and 1951 when an incinerator was in operation at the site. The source of contamination is believed to be from surface spills that migrated downward into the water table. By 1953, the area had been converted into a parking lot.

During a series of site investigations, TCE was detected in the soil, soil gas, and groundwater beneath Parking Lot 3. The Army selected Parking Lot 3 as a pilot test site to evaluate the use of air sparging as an alternative to, or as an enhancement of, groundwater extraction for remediation of TCE in groundwater. The test objectives were to evaluate the long-term efficiency of air sparging as an in-situ air stripper, to measure the radius of influence of sparge air in the subsurface, to track contaminant removal rates from the vadose and saturated zones, and to estimate design criteria potentially applicable to other sites at the Depot. A soil ventilation system was placed in the vicinity of the suspected source location to provide soil remediation concurrently with the sparge testing. The pilot test system was operated for 26 weeks. At the end of that time, residual concentrations of VOCs in the soil were evaluated. The estimated TCE reduction was 95 to 98 percent. An estimated 457 pounds of TCE had been removed.

The average residual soil concentration of TCE remaining at the end of the pilot test met the target soil gas cleanup level. However, several "hot spots" remained in the vadose zone, primarily in the capillary zone (the main source of groundwater contamination from the soil to the water) and the regulatory agencies requested that the Army conduct additional soil venting tests in these areas. The Army elected to perform additional soil ventilation as well as to test and evaluate an

innovative technology—high vacuum, dual phase extraction—which is effective in removing near-surface groundwater contamination. It was hoped that this technology would prove to be effective for removal of contaminants from the capillary zone by both water removal and vapor extraction. After 3 months of operation, approximately 70 percent of the TCE mass in the capillary zone was removed by the soil venting and dual phase extraction, while almost 95 percent of the TCE mass in the unsaturated zone was removed. Although dual phase extraction was effective at Parking Lot 3, the pilot tests indicated that air sparging is recommended over dual phase extraction when deep sparge wells can be installed to give a large radius of influence and when contaminants have progressed throughout the groundwater. Soil venting with air sparging is effective for removal of large amounts of contaminants in the unsaturated zone.

3.1.3.9

Freon 113 Area Pilot Test

Freon 113 was detected in groundwater samples from monitoring wells in the vicinity of Buildings 320 and 423 in 1988. As the groundwater concentrations steadily increased over the years, the Army decided to investigate the source of contamination. A historical site audit, consisting of subsurface hydrogeologic review, aerial photograph review, literature search, facility maps review, and personnel interviews, was conducted in 1993. The audit found information indicating that Freon 113 had been used extensively as a cleaning solvent at the Depot in the area around Building 320 and it may have been disposed of in drains within the building. Additionally, there had been indications of freon contamination in the soil when freon was detected in vapor samples collected during the remediation of Tank 2.

A remedial investigation was conducted using soil gas sampling and BAT probe sampling. The results indicated that freon had migrated through the soil to the groundwater, and that freon was present throughout the area in the vadose zone soils. The Army elected to conduct a pilot test to provide necessary data for the design of a complete remediation system for the freon spill area. The pilot test system was designed to strip freon from the soil and groundwater in the areas of highest concentrations.

The pilot test included an air sparging system with five sparge wells designed to remove freon and other volatile compounds from the groundwater. It also included a soil ventilation system consisting of four ventilation wells that would remove freon from the vadose zone soils and capture the volatile compounds sparged from the groundwater. The hope was that this technology would allow the Depot to reach lower residual cleanup levels as compared to conventional approaches and that final remediation goals could be achieved more quickly with this type of system. In fact, the pilot test system proved so effective for removal of freon that the Army was able to achieve the cleanup goals at the conclusion of the pilot test and consequently, development of a follow-on full-scale remediation system was not necessary.

3.1.3.10

Railyard Engine Shed

The Railyard Engine Shed (IRP site 028) housed a locomotive engine and historically was used for engine maintenance, which may have included refueling, lubrication and washing. There was a 12,000-gallon underground diesel fuel tank at the site which was removed in 1987. There was also a small sump located outside the building that was removed.

This site was investigated in July 1986, June 1990, April 1992, and October 1994. Diesel-range hydrocarbons were found in the soil at depths up to 5 feet below ground surface. The site was selected for a bioventing pilot test designed to evaluate the potential for in situ biodegradation of the diesel-range hydrocarbon contamination. During the pilot test, diesel concentrations decreased from a high of 7,300 mg/kg to less than 25 mg/kg. Evaluation of the residual levels remaining indicated that they presented no risk to human health or the environment. Therefore, no additional remediation was required.

3.1.3.11

No Action Sites

Those areas for which the Army was able to document, to the satisfaction of the regulatory agencies, that there was no threat to human health or the environment were classified as "no action" sites in the Basewide ROD. The documentation was based on historical records review, employee interviews, evaluation of downgradient groundwater monitoring data, and limited soil sampling.

The areas of concern addressed during the environmental investigation and documented in the Basewide ROD, overlap the parcels evaluated in the EBS investigation. The results of the environmental investigations at the Depot were a critical element of the EBS/FOST process, since this information was needed to demonstrate whether releases or disposal had occurred on land surfaces in areas being considered for property transfer.

A significant amount of work may be required to document, to the satisfaction of the regulatory agencies, that a site (or potential site) does not pose a threat to human health or the environment. One example is "Site 22." Site 22 was reported to be a radiological disposal area that operated in the late 1940s. Its potential existence and location were based on conflicting interviews. Some employees recalled such a disposal site while others insisted it did not exist. This controversy was first documented in a 1979 USATHEMA report. In 1981, the Army hired Battelle to take four soil samples (two surface and two subsurface) at the reported location of the disposal area. Radiological analysis indicated results below detection limits. Two years later, AEHA used a radiation detector in an attempt to locate the disposal area. No radiation was detected above background levels. In 1990, Kleinfelder conducted an infrared survey of the entire installation. No thermal anomalies were observed in the suspected location of Site 22. Kleinfelder also performed a review of historical aerial photos. Aerial photos from 1946, 1947 and 1949 showed no evidence of trenching or pits in the suspected location. In 1994, an informal radiological survey was performed at 120 locations. Again, no levels of gamma radiation were detected above

background levels and alpha contamination was below the minimum detectable levels. Cal/EPA in a January 20, 1994, letter to the Army recommended that a geophysical survey be performed. In December 1994, a noninvasive geophysical investigation (using electromagnetic induction) and a radiological (i.e., gamma) survey were performed by Foster Wheeler Environmental. The geophysical survey detected an anomaly that was smaller and less substantial than a typical landfill or buried disposal area. There were no radiological anomalies identified within the survey area; all measurements were within, or very near established background levels. Cal/EPA's final concurrence is still pending.

Another such example was the Firefighter Training Area (FFTA). The FFTA reportedly consisted of a pit into which gasoline, oil, or JP4 fuel were poured and ignited. In 1990, an extensive site investigation consisting of drilling, sample collection, and sample analysis was conducted in the area where the pit reportedly had been. No contamination was detected and there was no physical evidence to indicate that the site ever existed.

3.2

Compliance Program Status

Compliance activities at the Depot are being conducted with environmental restoration activities under the IRP. Compliance activities address USTs, hazardous materials management, asbestos, radon, PCBs, and water discharges. The status of compliance projects is presented in Tables 3-7 and 3-8. In addition to these activities, compliance-related removal and interim actions include removal of USTs, contaminated soils associated with hazardous materials, and the installation of free-product recovery systems. The status of these compliance-related removal and interim actions is presented in Table 3-9.

By consensus, the BCT has decided to respond to certain compliance-related releases under the IRP. In cases where significant groundwater contamination has resulted from compliance activities within an existing OU, the overall groundwater plume remedial response would be addressed under the IRP for that particular OU. Corrective action or closure activities will remain compliance issues. The status of compliance activities at the Depot is outlined below.

3.2.1

Storage Tanks

All known USTs at the Depot have been removed and, if necessary, sites were remediated. At the time of publication, a geophysical survey was being conducted at the site where UST No. 300-17 is believed to have been located. Preliminary data does not suggest the presence of a UST. Compliance actions regarding USTs are summarized in Table 3-9, which also contains a complete listing of all USTs. Included in the table are the tank identification number, vicinity location, volume, contents, status, and future actions required. Aboveground storage tanks located at the Depot are presented in Table 3-10.

3.2.2

Hazardous Materials/Waste Management

Hazardous wastes were accumulated or stored at hazardous waste accumulation sites for less than 90 days. Table 3-11 lists historic hazardous waste accumulation and storage areas. These waste streams included pesticides, plating chemicals, acids, caustics, metal plating sludges, solvents, paints and paint sludges, oils, grease, fuel, antifreeze, asbestos and PCBs. Prior to the end of the 90-day period the wastes were transferred to the Hazardous Waste Container Storage Area (HWCSA) or disposed of off-site.

The RCRA-permitted HWCSA (Building 412) has been in operation at the Depot since 1981. The existing facility is designed according to contemporary criteria for spill containment and separation of incompatible wastes. Building 412 is being closed pursuant to a Cal/EPA-approved closure plan. Closure should be completed by December 1995.

A consolidation area, Building 426 has a perimeter chain-link fence and metal roof. It is the location of the former hazardous waste consolidation area and two solvent distillation units (which have been removed). Paint cans; aerosol cans; solvent and thinner cans; and petroleum, oil, and lubricant (POL) cans were consolidated in this area and packed in 55-gallon drums prior to transfer to the HWCSA or to off-site TSD facilities. Used solvents were distilled and recovered using the solvent distillation units inside this area until April 1993. The area of the facility is approximately 2,000 square feet.

The former battery acid handling area was located in Building 411, until battery processing at the Depot was no longer considered cost effective because of permitting requirements. The waste handled in this area was sulfuric acid with dissolved heavy metals. The pH of the sulfuric acid was less than 2. In 1994, this building was closed as a RCRA facility under the supervision of Cal/EPA.

Radiological sources were used at the Depot. These are addressed under Section 3.2.13.

3.2.3

Solid Waste Management

Solid wastes from the Depot were collected by Caltech Services, a subcontractor to Johnson Controls World Services, and disposed of at either L&D Landfill Company, or the South City transfer station of the county of Sacramento. Waste from this transfer station was deposited at the Kiefer Road Landfill. The Depot disposed of approximately 13,685 cubic yards of municipal waste per year. The Kiefer Road Landfill received approximately 900,000 tons of waste per year, and had applied for permits that would, at the current usage rate, allow for operation through the year 2050.

3.2.4

Polychlorinated Biphenyls

Transformers at the Depot were inventoried and tested for PCBs. Table 3-12 contains a list of PCB-containing transformers. All PCB-containing transformers and capacitors have been removed and/or replaced.

3.2.5

Asbestos

Asbestos can be a concern in buildings, and inhalation of asbestos fibers can cause asbestosis in the lungs. An initial building survey was completed in 1989 and was followed by removal or repair of accessible friable asbestos from buildings listed in Table 3-13. Over the years, asbestos has been removed or repaired as normal maintenance for construction and repair projects. An Asbestos Management Plan was implemented and an updated Enhanced Asbestos Survey was completed by CAL INC in April 1994. This survey was initiated to supplement the original 1989 asbestos survey and assist the Depot in meeting California property disclosure requirements prior to transfer. If any building with asbestos containing building material (ACBM) is demolished it will generate asbestos-containing debris unless proper disposal methods are used. No building demolition occurred as part of the closure process.

3.2.6

Radon

Radon tests indicated that radon concentration levels at the Depot were all at background and below 4 picocuries per liter (pCi/l). Therefore, radon was not a concern.

3.2.7

RCRA Facilities (SWMUs)

Originally 27 SWMUs were identified at the Depot. For simplicity, all SWMUs are being handled as part of the IRP program. See Section 3.1.

3.2.8

NPDES Permits

The Depot was permitted under the statewide general permit for stormwater discharges. The State Water Resources Control Board elected to implement Section 402 of the Clean Water Act by requiring all general industrial dischargers to practice pollution prevention, and use Best Management Practices (BMPs) to minimize contamination in stormwater runoff. The Depot was committed to this program and its application.

The NPDES permit specified the facility operations at the Depot, as well as which buildings contained hazardous wastes. It described the Depot's program for spill prevention and named

individuals and companies responsible for implementing and enforcing the program. In addition to Depot personnel, the permit named Johnson Control World Services as the entity providing Hazardous Material Emergency Response Team services, and Cal Tech as the entity responsible for maintaining roads and grounds. These two companies, as well as Depot personnel, were responsible for implementing the Installation Spill Contingency Plan (ISCP), Hazmat Emergency Prevention Control and Countermeasure Plan (HEPCCP), Slug Control Plan (SLUG CP), and the Storm Water Pollution Prevention Plan (SWP³).

The NPDES permit replaced all existing and previous stormwater permits. The Depot closed out this permit in April 1995. A new NPDES permit is being prepared for the South Post Groundwater Treatment Plant to allow for release of treated groundwater into Morrison Creek. Monitoring of surface water is not an issue as indicated in Table 3-14.

3.2.9

Oil/Water Separators

Numerous oil/water separators exist at the Depot. They have been inventoried and inspected for materials and condition as part of the EBS process. No leaks or contaminated soils were found.

3.2.10

NRC Licensing

NRC licenses were issued for operations that occurred in Buildings 300 and Building 555. The license for Building 300 was held by the U.S. Army TMDE Support Center, a former tenant on the Depot. Building 300 was used for calibrating equipment containing radioactive materials. That mission at the Depot has ceased, and the NRC license for that mission is being deactivated. The NRC license for Building 555—the electro-optics facility has been terminated. Building 555 operations ceased in September 1994, when the Air Force won the electro-optics workload and moved the mission to McClellan Air Force Base. The Air Force modified its license to allow work on electro-optic devices to be performed at McClellan.

3.2.11

Pollution Prevention

A Source Reduction Evaluation Review and Plan (Plan) for the Depot was prepared in April 1992 and updated in October 1993. That plan complied with the California Hazardous Waste Source Reduction Review Act, which affects facilities that generate in excess of 12,000 kilograms of hazardous waste or 12 kilograms of extremely hazardous waste. The Plan for the Depot included estimates of hazardous materials waste generation, an evaluation of source reduction approaches for non-exempt wastes, and a time table for implementation of source reduction measures. The next reporting date under this Plan was 1994. However, manufacturing and maintenance missions at the Depot ceased at the end of 1993.

3.2.12

Mixed Waste

The only areas known to have a potential for mixed waste are the Building 300 Old Burn Pits and the South Post Burn Pits. Reportedly, radium dial paint waste was disposed of at the Building 300 site. Soil samples have been taken from various depths in and around the Old Burn Pits and analyzed for radium 226. The levels reported are comparable to background. This site is scheduled for remediation in 1995. At that time, additional monitoring will be conducted. Since one of the Old Burn Pits was moved to South Post Burn Pits prior to Building 300 construction, the South Post Burn Pits will be monitored for radium 226 relative to background levels at the time of remediation. The South Post Burn Pits is also scheduled for remediation in 1995.

3.2.13

Radiation

Potential past uses of radiation sources were identified in the following buildings:

- Building 242
- Building 244
- Building 246
- Building 248
- Building 251
- Building 255
- Building 257
- Building 320
- Building 325
- Building 353
- Building 555

Depot area/building surveys for the presence of radiation were conducted by the U.S. Army Center for Health Promotion and Preventative Medicine (provisional) in accordance with NRC and California state regulations and guidelines. Surveys were conducted in the buildings with sources and random surveys of warehouse space were conducted to ensure all areas were clean. The results of these studies indicate that radiation is at or below background levels and therefore, does not pose a threat to human health or the environment (USACHPPM 1995).

Decommissioning of the NRC License for Building 300 (BML 04-04279-01) was handled separately by the TMDE Laboratory (USACHPPM 1995). Results of this Decommissioning Report have not yet been received.

The 1979 USATHAMA report identified a potential "Radioactive Waste Disposal Site," in the extreme southwest corner of the Depot. This location, known as "Site 22" was investigated in December 1994 using both geophysical and radiological surveys. The disposal site was not located and has been determined not to exist.

3.2.14

Lead-Based Paint

Lead-based paints were used at the Depot so a lead-based paint survey (along with the enhanced asbestos survey) was conducted and completed in April 1994 by CAL INC through the ACOE. Building demolition of buildings having lead-based paint will generate lead-contaminated debris requiring proper disposal. No sandblasting or demolition of structures painted with lead-based paint has been reported. No evidence has been found that suggests that lead has been released into, or has contaminated, the environment. No building demolition occurred as part of the Depot closure.

3.3

Status of Natural and Cultural Resources Programs

3.3.1

Vegetation

Maintenance of vegetation in the area zoned as Open Space has been transferred to the City. A small portion kept for remediation will continue to be maintained by the Army until the property is transferred. The FOST for the transfer of property to the City of Sacramento in March 1995 recommends that the entire Open Space area be maintained as wildlife habitat, which would also preserve the vegetation.

3.3.2

Wildlife

The Depot provided a suitable habitat for the burrowing owl (a California Species of Concern), especially in grassland habitats along the railroad rights-of-way, northwest reservoir, west perimeter and the laser testing range (Figure 3-4). Since Version 1 of this BCP, additional burrowing owl sites have been discovered on the Depot. There were at least 12 active burrow sites in 1994 and it was estimated in the EIS that there are between 8 and 14 pairs of burrowing owls on the Depot. The Depot is a regional refuge for this species, as surrounding habitat has been replaced by industrial and residential development. These burrow sites are being protected until all the property is transferred to the City of Sacramento. The Disposal and Reuse EIS recommends that the City maintain the area zoned as wildlife habitat. This should provide protection for several of the 12 burrow sites.

3.3.3

Wetlands and Floodplains

Wetlands at the Depot consist of numerous small seasonal depressions, the Old Morrison Creek channel, and portions of the current Morrison Creek (Figure 3-5). Seasonal depressions scattered within the fenced perimeter of the base contained some species characteristic of wetlands (woolly marbles, popcorn flower, goldfields), but lacked hydric soils and other characteristics of

jurisdictional wetlands. The area outside the northwest fenced perimeter, but within the Depot property, contains potential wetlands that were not included in the original delineation, because there were no plans to affect that area. Additional delineations will be necessary in this area if the potential wetlands could be affected. The present Morrison Creek is a concrete-lined channel operated and maintained as a flood control facility. These resources are evaluated in the Disposal and Reuse EIS.

The Federal Emergency Management Agency (FEMA) places the western 1/3 of the Sacramento Army Depot (including Morrison Creek) in Flood Zone A99 and the rest of the Depot in Flood Zone X. Zone A99 is defined as an area to be protected from a 100-year flood event by federal flood protection systems under construction; no base elevations of the flood waters have been determined (Figure 3-6). Zone X includes areas within the 500-year floodplain; areas that are protected by levees from external 100-year flood waters, but may have smaller drainages that can flood during 100-year events with flood depths of 1 foot or less; and drainage areas of less than 1 square mile. The flood scenarios used by FEMA combine levee breaches with heavy rain to include the Depot within the 100-year floodplain (FEMA 1989).

3.3.4

Designated Preservation Areas

Preservation areas include the habitat for the threatened vernal pool fairy shrimp (discussed in the following subsection) and wetlands along the northwest perimeter of the Depot. These areas have been transferred to the City of Sacramento or to the Army Reserves. A conservation easement was recorded to protect the vernal pool fairy shrimp located in the southeast portion of the Depot (Pool 413). The undeveloped area (which includes the wetlands in the northwest perimeter) is zoned as Open Space by the City to be maintained as wildlife habitat.

Burrowing owl nesting sites on lands not yet transferred are being maintained by the Army. The FOST for future transfers will recommend that the new owners (i.e., the City of Sacramento) consult with the California Department of Fish and Game (CDFG) when planning to modify burrowing owl nesting areas, as specified in the EIS mitigation measures.

3.3.5

Threatened and Endangered Species (State and Federal)

The CDFG, the California Natural Diversity Data Base (CNDDB), and the U.S. Fish and Wildlife Service (FWS) were contacted in the spring of 1991 and 1994 regarding special-status plant species.

Field surveys were performed to confirm the absence of special-status species, with special attention to those species of concern to the CDFG and FWS. The results show one threatened species (*Branchinecta lynchi*) and no endangered species occur at the Depot (Figure 3-4A). A species proposed for federal listing (California linderiella) ultimately was not listed. The decision to list the *Branchinecta lynchi* was decided on September 19, 1994. One formerly proposed

species (tricolored blackbird) has been reported at the Depot. Also, one Species of Special Concern (burrowing owl) nests on the Depot, as discussed in Section 3.3.2 above.

The *Branchinecta lynchi* and California linderiella are 1-inch long invertebrates sometimes called "fairy shrimp." They are typical of vernal pools. Both species were found on the Depot in early 1994. Only one location (located immediately north of the B.T. Collins Reserve Training Center) contained vegetation, hydric soils and other characteristics consistent with viable habitat. This area was fenced and marked with warning signs to prevent any adverse impacts to the *Branchinecta lynchi*. The Army completed its consultation obligations to confer with the FWS on any action likely to jeopardize the continued existence of, or result in destruction or adverse modification of, critical habitat for the threatened species. Since this property was transferred to the City of Sacramento, on March 3, 1995, the City will have to comply with Endangered Species Act requirements prior to beginning activities in this area.

With the establishment of the B.T. Collins Reserve Center on the Reserve Enclave, additional fairy shrimp monitoring was performed during the very wet 1994-1995 winter. These surveys resulted in additional seasonal pools (vernal pool fairy shrimp habitat) being identified (Figure 3-4B). The Army Reserves has negotiated mitigation payments of nearly \$500,000 to be able to construct new facilities at the Center.

The tricolored blackbird is a Category 2 candidate species, which was rejected for endangered status in 1992. The FWS advises that potential impacts to species once petitioned for endangered status should be evaluated, in the event the species should be resubmitted for consideration.

3.3.6

Cultural Resources

Cultural resources studies including archaeological, historic architectural, and Native American consultation surveys have not resulted in the recording of historic or cultural properties at the Depot that are eligible for nomination to the National Register of Historic Places. Benicia Army Cemetery, a former subinstallation of the Depot, is listed on the National Register.

The Army has signed a Programmatic Agreement with the Advisory Council on Historic Preservation and the National Council of State Historic Preservation Officers regarding the closure and realignment of Army installations in accordance with the Base Closure and Realignment Act. The Programmatic Agreement stipulates that the Army will coordinate the NEPA process with its activities in compliance with Section 106 of the National Historic Preservation Act (NHPA).

To comply with NHPA for the Depot base closure, the Army requested on August 6, 1993, the concurrence of the California Office of Historic Preservation (OHP) that base closure will not affect significant historic or cultural properties. The OHP concurred with this determination by not having objected to it within 15 days. Regulations implementing the NHPA at 36 CFR 800.5(b), stipulate that a State Historic Preservation Officer has 15 days during which to object to

a lead agency's determination of no effect on historic properties. Section 106 NHPA compliance is therefore complete.

Although significant historic or cultural properties have not been recorded at the Depot, it is possible, based on the region's ethnology, prehistory, and history, that buried prehistoric or historic archaeological sites or traditional cultural properties could be discovered during demolition or construction activities at the Depot after closure.

The Benicia Army Cemetery, formerly a subinstallation of the Depot, is listed on the National Register of Historic Places as a contributing property to the Benicia Arsenal/Benicia Barracks National Register Historic District. The Depot prepared a historic resources overview and management plan for the cemetery (Ebasco Environmental 1993). The Sierra Army Depot with assistance from ACOE, Sacramento District will continue management of the cemetery.

3.4

Environmental Condition of Property

To assist in managing environmental restoration and compliance to support property disposal, an Environmental Condition of Property map has been prepared. It assesses the progress of ongoing environmental restoration, identifies areas where further response may be required, and indicates areas suitable for transfer.

CERFA

The Environmental Condition of Property map was developed with all site characterization information, including the Final CERFA report (USAEC 1994) and the EBS documents. The CERFA analysis was made on the basis of:

- A detailed search of federal government records pertaining to the property
- Recorded chain-of-title documents regarding the real property
- Aerial photographs that may reflect prior use
- Visual site inspection of the installation and immediately adjacent properties
- A physical inspection of property adjacent to the installation, to the extent permitted by owners or operators of such property
- Reasonably obtainable federal, state, and local government records of each adjacent facility where there has been a release of any hazardous substance or any petroleum product or its derivatives.
- Interviews with current or former employees involved in operations on the installation

The CERFA report, placed the 98 EBS study areas into one of four categories:

- CERFA Parcel
- CERFA Parcel with Qualifiers(s)
- CERFA-Disqualified Parcel
- CERFA-Excluded Parcel

The Draft CERFA report split two of the EBS study areas. The outside portion of Study Area 1 was classified as a CERFA Parcel, while the inside portion was a CERFA-Disqualified Parcel. Study Area 13 was also split. The northern portion was classified as a CERFA Parcel, while the southern portion was classified as a CERFA-Disqualified Parcel. For purposes of the Environmental Condition of Property map, it was determined not to split the EBS study areas; therefore, the most conservative category was used. That is, both Study Area 1 and 13 were considered CERFA-Disqualified Parcels. Figure 3-7 presents the results of the CERFA categorization, with some changes from the draft report based on comments made by Cal/EPA and USEPA, that were accepted by AEC.

EBS

The CERFA data, along with information learned from the EBS studies, was then evaluated for each of the 98 EBS study areas to determine which of seven DoD area types represented the condition of the property regarding the presence of hazardous substances and petroleum products or other toxic materials. These areas were determined using the CERFA study, as well as:

- Review of past and current activities; including review of historical records and aerial photographs and agency databases
- Interviews with past and current employees
- Visual site inspection conducted as part of the EBS process
- Sampling data associated with relevant PA/SI, RI/FS, and UST efforts

Since the ranking methods use different criteria, there is not a direct correlation between the two systems. The seven DoD categories relate to the confidence that can be gained regarding each area's cleanliness. They are as follows:

- 1) Areas where no storage, release or disposal of hazardous substances or petroleum products has occurred (including no migration of these substances from adjacent areas).
- 2) Areas where only storage of hazardous substances or petroleum products has occurred (but no release or disposal or migration from adjacent areas has occurred).
- 3) Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, but at concentrations [quantities] that do not require a removal or remedial action.

- 4) Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
- 5) Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial actions are underway, but all required remedial actions have not yet been taken.
- 6) Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented.
- 7) Areas that are unevaluated or require additional evaluation.

Figure 3-8 summarizes the status of information on the environmental condition of the Depot property in terms of these categories.

3.4.1

Areas Where No Storage, Release, or Disposal Has Occurred

The white areas designated on Figure 3-8 as areas where no storage, release or disposal has occurred (i.e., area type 1) were determined using the CERFA analysis prepared by the AEC. These EBS study areas were classified by AEC as "CERFA Parcels" (see Figure 3-7). CERFA parcels are defined as "parcels in which there is no evidence of current or past storage, release, or disposal of petroleum products or hazardous materials, and for which there is no evidence of the presence of non-CERCLA environmental concerns" (USAEC 1994).

3.4.2

Areas Where Only Storage Has Occurred

The blue areas in Figure 3-8 (i.e., area type 2) are areas where only storage of hazardous materials or petroleum products has occurred for one year or more. Unless evidence to the contrary was available it was assumed that materials were stored for one year or longer.

3.4.3

Areas Where Storage, Release, Disposal, and/or Migration has Occurred, But Require No Remedial Action

The light green areas in Figure 3-8 (i.e., area type 3) are areas where some contamination has occurred from storage, release, or disposal of hazardous materials or petroleum products or from contamination that has migrated into the areas. However, the level of contamination does not require remediation.

3.4.4

Areas Where Storage, Release, Disposal, and/or Migration has Occurred, and All Remedial Actions Have Been Taken

The dark green areas in Figure 3-8 (i.e., area type 4) are areas where contamination has occurred from release of hazardous materials or petroleum products or from contamination that has migrated into the areas. However, the contamination has been fully remediated.

3.4.5

Areas Where Storage, Release, Disposal and/or Migration has Occurred and Action is Underway, but Not Final

The yellow areas in Figure 3-8 (i.e., area type 5) are areas where remediation activities are underway. This includes areas above contaminated groundwater plumes. If any portion of a EBS study area is over the groundwater plume, then the entire study area has been colored yellow. Groundwater contamination resulted from two separate sources (see Figure 3-2): TCE contamination from the South Post Burn Pits; and TCE contamination at Parking Lot 3. These areas are being evaluated under the IRP program.

3.4.6

Areas Where Storage, Release, Disposal and/or Migration Has Occurred, but Required Response Actions Have Not Been Taken

No EBS Study Areas have been identified as area type 6.

3.4.7

Unevaluated Areas or Areas Requiring Additional Evaluation

All areas at the Depot have undergone screening and evaluation. Therefore, no EBS Study Areas have been identified as area type 7.

3.4.8

Suitability of Installation Property for Transfer by Deed

From the information presented in Figure 3-8, several EBS study areas could be transferred by deed. Area types 1 through 4 are generally considered suitable for transfer by deed. Regulatory agencies (USEPA and Cal/EPA) also consider portions of area type 5 (yellow) available for transfer by deed, since they are willing to allow disposal when the surface property is clean even though groundwater contamination may still be under treatment by an approved treatment system (see Section 2.2). Therefore, all areas but two pump-and-treat systems at Study Areas 58 and 83, and the areas undergoing remediation (Study Areas 12, 28, 80 and 88) are considered available for transfer by deed after it is determined by USEPA that all remedial action has been taken with respect to the groundwater treatment program (see Figure 3-9).

3.5

Status of Community Involvement

The Depot established a community relations program intended to inform employees of the Depot and the local community of the IRP progress at the Depot. The program is designed to provide an avenue for the exchange of information and to involve the community in the decision-making process. Community relations activities conducted to date at the Depot are summarized in this section.

3.5.1

EIS Process

A public involvement plan was developed (Figure 3-10) and followed to disseminate information to the community about the disposal and reuse process, to develop ongoing communication with the community, encourage community involvement, and monitor and respond to community concerns. The following actions have been taken to involve the community:

- Published the Notice of Intent to prepare the EIS in the Federal Register and local media, and distributed the announcement to agencies, public interest groups, and individuals, in December 1992. These announcements advertised a scoping meeting and invited written comments.
- Conducted a scoping meeting with all interested parties on January 28, 1993 to identify issues to be addressed in the EIS.
- Received scoping comment letters until February 8, 1993, to obtain further comments on what to address in the EIS.
- Prepared the EIS Scoping Report, and made it available at local repositories.
- Conducted monthly meetings with the City of Sacramento Reuse Commission and Planning Department to work cooperatively with them to: develop alternatives to analyze in the EIS; brief them on the EIS status; and to ensure their understanding of the real estate processes.
- Released the Disposal and Reuse Draft EIS for public review in February 1994, and at the same time, invited all interested parties to review and comment on the document during the 45-day comment period (February/March 1994).
- Published the Notice of Availability (NOA) of the Disposal and Reuse EIS in the Federal Register and in the local media in February 1994.
- Conducted a public hearing announced in the NOA to receive comments and recommendations regarding the Draft EIS in mid-February 1994.

- Published a NOA of the Final EIS in the Federal Register, and furnished those who commented on the Draft EIS with a copy of the Final EIS.
- Waited 30 days after the NOA to receive comment on the Final EIS before signing the ROD in January 1995.

3.5.2

FFA Process

In December of 1988, the U.S. EPA, State of California, and U.S. Army signed the FFA. Under this agreement, the Army agreed to evaluate the entire facility, including the contaminated groundwater. This document is available for public review at the information repositories.

- Information repositories. Three public information repositories have been established. The repositories contain site-related documents relative to the environmental activities at the following locations:

Department of the Army
Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814

California State University
Sacramento Library
2000 Jed Smith Drive
Sacramento, CA 95819

George Sim Community Center
6207 Logan Street
Sacramento, CA 95824

- Administrative Record. An Administrative Record File has been established at the Corps of Engineers, Sacramento District in accordance with CERCLA requirements. A copy of the Administrative Record is on file at the California State University Library, Sacramento.
- Community Relations Plan. The ACOE's contractor, Kleinfelder, Inc. prepared a Community Relations Plan (CRP) that was approved in Fall 1992. The CRP was prepared to establish two-way communication and understanding between the Depot, the local community and interested parties. The CRP was based on information gathered through conducting community interviews, reviewing Depot PAO and Cal/EPA files, and reviewing related environmental documents. The CRP will be updated in 1996 to cover community involvement in relation to long-term operations and maintenance of the groundwater treatment plant.
- Technical Review Committee. A TRC was established to assure that the interests of the public, state and federal regulatory agencies, and the U.S. Army are considered when making decisions regarding environmental activities at the Depot. The TRC is also considered the BCT. The TRC meets monthly (or as necessary) to discuss technical issues regarding the direction of the IRP. Members of the TRC include program managers, engineers, and scientists from the Depot, ACOE, USEPA, Cal/EPA, RWQCB, community

representatives, remedial contractor representatives, and other members including various elected officials. In June 1994, the TRC was joined with members of the community to form the RAB.

- **Mailing List.** A mailing list consisting of employees, community residents, businesses, state and federal agencies, media, various elected officials and organizations was established to provide interested parties with information on ongoing IRP activities at the Depot. The mailing list is maintained and updated by the contractor.
- **Fact Sheets.** The fact sheets summarize the status of current or proposed IRP activities at the Depot (Appendix C). The Depot mailing list was used to distribute the fact sheets.

July 1989	– Proposed Plan, Groundwater
April 1991	– Proposed Plan, Tank 2
April 1991	– Proposed Plan, Oxidation Lagoons
April 1992	– Tank 2, ROD Announcement
May 1992	– Revised Proposed Plan, Oxidation Lagoons
January 1993	– Oxidation Lagoons, ROD Announcement
January 1993	– RCRA Storage Permit
February 1993	– Overview brochure of the Depot IRP program
June 1993	– Burn Pits, ROD Announcement
February 1994	– Environmental Impact Study/Public Participation Fact Sheet
March 1994	– Establishing a Restoration Advisory Board
May 1994	– Air Sparging, “A Look at New Technologies”
June 1994	– Request for Restoration Advisory Board Members
August 1994	– Depot’s Groundwater Cleanup
March 1995	– Miscellaneous Sitewide Fact Sheets
March 1995	– Container Storage Facility Closure
June 1995	– Sacramento Army Depot Cleanup Update

- **Public Meetings/Workshops.** Informational meetings presenting the status of IRP efforts at the Depot were held on:

August 20, 1991	– Proposed Plan Public Meeting
May 27, 1992	– Proposed Plan Public Meeting
August 13, 1992	– Proposed Plan Public Meeting
November 1993	– Public Meeting
March 23, 1994	– Proposed Plan and RAB Public Meeting
July 1994	– First Formal RAB Meeting
August 1994	– RAB Public Meeting and RAB Workshop Briefing
September 1994	– Groundwater Workshop
October 1994	– Health Risk Workshop

December 7, 1994 – Sitewide Proposed Plan Public Meeting
January 1995 – RAB Update Meeting
February 1995 – RAB Update Meeting
April 25, 1995 – RCRA Closure Plan Public Meeting
July 19, 1995 – Public Clean-up Site Tour

- RAB. In June 1994, the Army established a RAB to increase public participation by involving the community in the decision-making process. The RAB consists of representatives from the TRC and 12 community members.
- Videos. A video describing the Depot's past and present environmental practices was developed to be used at public meetings and viewed by any interested party. The video is made available through the ACOE.
- Glossary. A glossary containing environmental terms frequently associated with the Depot IRP program was developed and is available to the public (Appendix I).

Table 3-1. Previous Investigations at Sacramento Army Depot

Date	Author	Title	Investigation Type
December 1979	USATHAMA	Installation Assessment of Sacramento Army Depot, Records Evaluation Report No. 146	Records Evaluation
November 1981	Battelle	Environmental Contamination Survey and Assessment of Sacramento Army Depot, Report No. DRXTH-FS-CR81121	Records Evaluation and Field Investigation
September 1983	AEHA	Phase I, Geohydrologic Study No. 38-26-0368-84	Records Evaluation
December 1983	AEHA	Phase II, Geohydrologic Study No. 38-26-0368-84	Records Evaluation
June 1985	Woodward-Clyde Consultants	Field Investigation and Analytical Testing, Sacramento Army Depot	Field Investigation
August 1985	Earth Science Associates	Final Report on Drilling and Installation of Groundwater Monitoring Wells 8 through 13, Sacramento Army Depot	Field Investigation
1986	OHM	Removal of U/G Storage Tanks, Sacramento Army Depot	Field Investigation
November 1986	Kleinfelder	Phase II, IRP Well Completion Report, Sacramento Army Depot	Field Investigation
January 1987	Kleinfelder	Phase II, IRP Soil and Groundwater Assessment, Sacramento Army Depot	Field Investigation
March 1988	Kleinfelder	Addendum to Well Construction Reports MW-21 through MW-26	Field Investigation
June 1989	AEHA	Evaluation of Solid Waste Management Units No. 38-26-0883-8	Records Evaluation

Note: See Appendix B for list of documents generated during the RI/FS at the Depot.

Table 3-2. Solid Waste Management Unit (SWMU) Location Summary

SWMU No.	Description	RI Report Results/Findings	Final Determination
---	Groundwater	Volatile organic contamination on-site and off-site.	ROD for on-site groundwater remediation signed in 1989. Basewide ROD signed in 1995 establishes on-site and off-site remedial actions.
---	Freon 113 Area	Soil and groundwater contamination. Groundwater contamination below MCL.	Air sparging pilot test completed. Cleanup goals met.
---	Parking Lot No. 3	Localized VOC soil and groundwater contamination.	Air sparging pilot test completed. Soil meets cleanup goals. Groundwater remediation addressed in Basewide ROD signed in 1995.
001	Oxidation Lagoons	Metals contamination in top 2 to 3 feet of soil.	ROD signed in 1992 selected soil washing. ROD amended by Basewide ROD. Soil stabilization at South Post Burn Pits CAMU is the selected remedy.
002	South Post Burn Pits	Soil contamination with VOCs, metals, PCBs, dioxins/furans. Source of groundwater contamination in southwest Depot.	ROD signed in 1993. Remediation of VOCs by soil venting is completed. Soil stabilization to begin in 1995. CAMU set up in Basewide ROD to allow several sites to be stabilized at the Burn Pits.
005	Tank 2	VOC contamination in soil.	ROD signed in 1991. Remediation by soil venting completed February 1993.
006	Firefighter Training Area	Potential locations investigated but no contamination found.	No further action.
007	Building 300 Burn Pits	Soil contamination with metals, solvents, pesticides, PCBs.	Basewide ROD signed in 1995 selected soil excavation and stabilization at South Post Burn Pits CAMU.
008	Pesticide Mix Area	Pesticide—contaminated soil removed during remedial investigation.	No further action.
009	Battery Disposal Well	Metals—contaminated soil removed during remedial investigation.	No further action for in-situ soil. Excavated soil will be stabilized at South Post Burn Pits CAMU.

Table 3-3. Expedited Actions Status

SW/MU No.	Action	Purpose	Status
--	On-site groundwater remediation	<ul style="list-style-type: none"> • Pump and treat contaminated groundwater. • Reduce off-site migration of contaminated groundwater. 	<ul style="list-style-type: none"> • Treatment plant operation began November 1989. Clean water discharged to regional sewer. • Basewide ROD established remedy for on-site and off-site contamination.
005	Soil ventilation of contaminated soil at site of former underground storage tank (Tank 2 site)	<ul style="list-style-type: none"> • Remove waste solvents from soil. • Reduce potential source of groundwater contamination. 	<ul style="list-style-type: none"> • Remediation completed in February 1993.
001	Soil washing of metals contaminated soil at Oxidation Lagoons site.	<ul style="list-style-type: none"> • Remove metals contamination from soil. 	<ul style="list-style-type: none"> • Pilot scale operations found problems with soil washing. • Remedy changed to soil stabilization in Basewide ROD. • Soil stabilization will begin in 1995.
002	<ul style="list-style-type: none"> • Soil ventilation of volatile organic contaminated soil at South Post Burn Pits site. • Soil stabilization of non-volatile contaminants 	<ul style="list-style-type: none"> • Remove source of groundwater contamination in southwest depot. • Stabilize non-VOC contaminants. 	<ul style="list-style-type: none"> • Soil venting completed in 1995. • Soil stabilization to begin in 1995.
008	Removal of pesticide-contaminated soil at the old Pesticide Mix Area.	<ul style="list-style-type: none"> • Investigate lateral and vertical extent of contamination. • Reduce soil contamination. 	<ul style="list-style-type: none"> • Investigation and soil removal completed in April 1993. • IDW sent to Class I landfill.
009	Removal of debris and contaminated soil from former Battery Disposal Well site.	<ul style="list-style-type: none"> • Investigate extent of debris. • Investigate lateral and vertical extent of contamination. • Reduce soil contamination. 	<ul style="list-style-type: none"> • IDW removed and stockpiled on-site for subsequent disposal. Removal completed in April 1993. • Removed soil to be stabilized at South Post Burn Pits in 1995.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
AREAS ADDRESSED BY OPERABLE UNIT RODS								
---	---	South Post Groundwater	On-base and off-base contamination by VOCs in southwest area of Depot.	N/A	Monitoring of A/B, C and D aquifers since 1989. On-base and off-base wells sampled. Samples have been analyzed for VOCs, metals, minerals and pesticides. Contamination is primarily in A/B aquifer.	Chloroform, carbon tetrachloride, trichloroethene, tetrachloroethene, 1,2-dichloroethene, 1,2-dichloroethane.	2 E-04 HI 3.5	Extraction using 7 vertical wells and treatment using hydrogen peroxide/ultraviolet method is ongoing. An interim ROD for on-base groundwater was signed in 1989. The Army will expand the remedy to address the entire plume, as presented in the Basewide ROD.
80	001	Oxidation lagoons (and west portion of Old Morrison Creek)	Waste holding ponds used for the disposal of plating shop wastes containing heavy metals.	1950-1972	Soil samples collected from each lagoon, drainage ditches, and Old Morrison Creek were analyzed for metals. Contamination restricted to top 2-3 feet of soil.	Arsenic, cadmium, lead	2E-04 HI 10	The ROD was signed in 1992. Contract was awarded and pilot scale soil washing test was conducted. The Basewide ROD amended the 1992 Oxidation Lagoons ROD and selected soil stabilization as the remedy.
88	002	South Post Burn Pits	Two pits used to bury and burn a variety of material such as plating shop wastes, paint sludge, mercury batteries, construction debris, and waste from Building 300 Old Burn Pits.	1950s-1966	Soil samples collected from surface to 85 feet were analyzed for VOCs, semi-VOCs, metals, PCBs, dioxins, furans. VOC contamination extends to groundwater. Other contaminants confined to the pits (surface to 20 ft. below surface).	Arsenic, cadmium, chromium, lead, 1,2-dichloroethene, tetrachloroethene, trichloroethene	2E-04 HI 9.5	The ROD was signed in March 1993. Remediation of VOCs by soil venting is completed-soil stabilization to follow. The Basewide ROD included an amendment to the Burn Pits ROD, to expand the scope of the stabilization to include soil from Building 300, Battery Disposal Well, and Oxidation Lagoons.
32	005	Tank 2	Soil contaminated by waste solvents from Tank 2.	Mid-late 1970s	Soil samples collected to 50 feet below surface were analyzed for VOCs, semi-VOCs, organochlorine pesticides & PCBs. Contamination detected to 30 feet below surface.	2-butanone, ethylbenzene, xylenes, tetrachloroethene	5E-04 HI 18	The ROD was signed in 1991. Site has achieved cleanup standards using soil vapor extraction and is capped with concrete. No further action is required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
AREAS REQUIRING REMEDIAL ACTION								
58	--	Parking Lot 3 Groundwater	Zone A/B plume extending under and south of Parking Lot 3.	N/A	Multiple monitoring wells installed and sampled since early 1992. BAT Probe investigations have been conducted. Two pilot wells installed and two pump tests conducted.	TCE up to 56 µg/l. PCE up to 37 µg/l. Carbon tetrachloride and 1,2-DCA also exceed cleanup goals. Chromium detected in groundwater is a potential contaminant of concern.	SE-05 HI <1	Remediation underway.
28	007	Building 300 Old Burn Pits	Two pits used for the disposal of plating shop wastes, paint sludge, acids, radium dial paint, and mercury batteries.	1945–1950s	Soil samples collected from surface to 80 feet below surface. Samples analyzed for organochlorine/organophosphate pesticides, PCBs, VOCs, semi-VOCs, metals, dioxins, furans, radium 226/228.	PCBs, arsenic, cadmium, lead	9E-05 HI 4.2	As set forth in the Basewide ROD, contaminated soil will be excavated and combined with soil at the South Post Burn Pits for stabilization.
82	009	Battery Disposal Well	Area used for the disposal of dry cell batteries and other industrial debris.	1950s–1960s	Soil and debris excavated to 30 feet below surface. Soil samples analyzed for VOCs, semi-VOCs, metals. Debris and contaminated soil were excavated during the site investigation in April 1993.	Cadmium, copper, lead, mercury, silver, zinc.	2E-08 HI <1	Excavated soil (investigation-derived waste) is stockpiled on site. This soil will be stabilized at the South Post Burn Pits.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
NO ACTION/NO FURTHER ACTION AREAS								
58	--	Parking Lot 3 Soil	Site consists of a parking lot approximately 280 ft x 360 ft located in the western-central portion of the Depot.	1946-1951	48 soil vapor samples collected from 0-80 feet below surface. Soil samples collected from 11 borings to 80 feet below surface. Samples analyzed for VOCs. Recent sampling from permanent soil gas monitoring stations.	Trichloroethene (max. baseline 480 µg/kg in soil gas), tetrachloroethene, 1,2-dichloroethene, 1,2-dichloroethane, carbon tetrachloride, chloroform	Not Calculated	An air sparging/soil venting pilot test and additional venting were completed. Confirmation sampling shows TCE removal to less than one pound residual. Residual concentrations in soil present no risk to human health or the environment. Short-term monitoring to confirm soil cleanup will be conducted as needed.
63, 68	--	Freon 113 Area	Site consists of a square-shaped area approximately 10 acres in size located in the vicinity of Buildings 300, 321, 325, 330, 420 and 423. Freon 113 and other VOCs in localized soil and groundwater.	1950s-1970s	Soil and soil gas samples collected from 16 borings. Groundwater samples collected from 5 borings. Samples collected from surface to 130 feet below surface. Suspected sources are drains in Building 320 sewer lines, cleaning operations in Building 420 and 423.	Freon 113 (max. 2750 ppmv) in soil gas, chloroform (max. 188 ppmv) in soil gas	5E-05 HI <1	An air sparging pilot test was conducted at this site. Residual contaminants in soil present no risk to human health or the environment. Short-term monitoring to confirm cleanup of soil will be conducted as needed. Groundwater concentrations are below the MCLs for drinking water. No further action required.
86	--	Contractor's Spoils Area	Site consists of a number of soil piles with various amounts of construction debris (e.g., asphalt, concrete, scrap metal), and various organic material such as grass cuttings.	1966-1980s	Soil sampling of surface and near-surface soils and debris piles. Analytical results indicate presence of Freon 113, lead, zinc, PAHs and phthalates typical of the construction materials found. Site debris will be removed prior to base closure.	Benzo(a)pyrene (0.49 mg/kg)	1E-06 HI <1	B(a)P was detected in one sample at 1 foot below surface. The compounds found are associated with the construction debris. Risk assessment indicates no threat to human health or environment. No action required. This area will be graded and the debris separated and removed.
81	003	Small Shallow Lagoon	Topographic low located east of Oxidation Lagoons may have received surface water runoff.	Mid-1960s to early 1970s	One soil boring drilled in low area. Soil samples analyzed for metals.	None	None	Metals at background levels. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
80, 88	004	Sludge Piles	Piling south of the Oxidation Lagoons with possible metals contaminated soil.	Late 1950s to late 1960s	In 1994, 3 soil borings drilled. Samples collected at 0, 5, and 10 feet below surface. Samples analyzed for metals.	None	None	Metals at background levels. No action required.
82	006	Firefighter Training Area	Area reportedly used for Depot firefighter training purposes. Gasoline and JP4 ignited and burned in a pit.	1958–1963	Nine soil borings drilled. Samples collected from surface to 21 feet below surface and analyzed for VOCs, semi-VOCs, metals, organochlorine pesticides, PCBs, total petroleum hydrocarbons (TPH), dioxins, and furans.	None	None	Reported site location was investigated and no contamination was found. No action required.
51	008	Pesticide Mix Area	Area used for the rinsing of pesticide containers. Rinse water was allowed to flow onto the open ground and seep into the soil.	?–1981	Soil samples collected to 89 feet below surface. Samples analyzed for PCBs, VOCs, TPH, organochlorine/organophosphate pesticides. Contamination mainly in top 3–4 feet. Contaminated soil excavated during removal of drain well in April 1993.	4,4'-DDT, 4,4'-DDE, 4,4'-DDD-, Prometon, chlordane	3E-06 HI <1	Investigation-derived waste disposed in Class I landfill. Excavation has been backfilled with clean soil. The area presents no threat to human health or the environment. No further action required.
81	010	Possible Trenches	Two parallel trenches indicated from a 1957 aerial photo. Not visible in a 1961 aerial photo.	1957–1961	8 borings were drilled to 21.5 feet below surface. Soil samples were collected from 1.5, 6, 11, 16, and 21 feet below surface. Samples were analyzed for VOCs, semi-VOCs, metals.	None	None	Metals are reported at background levels. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
87	011	Two Trenches	Site consists of a north/south trench and an east/west trench. This site is located adjacent to the Contractor's Spoils Area and Old Morrison Creek.	1966–1968	8 borings drilled to 21.5 feet below surface. Samples collected at 1.5, 6, 11, 16, and 21 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals. VOCs detected.	1,1,1-trichloroethane (25 µg/kg) tetrachloroethene (5.1 µg/kg). xylenes (10 µg/kg)	None	Metals are at background levels. Risk assessment for VOCs indicates no threat to human health or the environment. No action required.
32	012	Facility 315 (Cyanide Sump)	A 12,000-gallon sump used to hold waste containing cyanide, cadmium and zinc prior to transfer to the cyanide leach field.	1954–1956	4 borings drilled to 11.5 feet below surface. Samples collected at 1, 6, 11 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals, cyanide.	None	None	Metals reported at background levels. The sump was covered by 8–12 inches of concrete. It has been opened up, cleaned out, and backfilled with clean fill. No further action required.
32	013	Facility 316 (Acid Sump)	A 12,000-gallon sump used to hold acid wastes and metals.	1955–1972	3 borings drilled to 10 feet; 1 boring to 8 feet. Samples collected at 1, 5, 5, 9, 5 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals, cyanide. pH ranged from 7–8.4 except one sample with pH 4.8. Elevated metals detected.	Zinc (148 mg/kg) Cadmium (21.7 mg/kg)	None	Site was covered by 8–12 inches of concrete. Risk assessment indicates metals present no threat to human health or the environment. The sump has been opened up, cleaned out, and backfilled with clean fill. No further action required.
80	014	Possible Shallow Lagoon	Initially indicated from a 1953 aerial photo as a shallow dry depression. Disposal of wastes at this site has not been documented and no evidence exists as to the use, storage or disposal of hazardous materials.	1953–1957	A soil gas survey was conducted to locate the site. Reported maximum total volatile hydrocarbons of 4 µg/l reported at depth of 0–3.5 feet below surface. Soil borings drilled at site 006 included this area. No contaminants were detected.	None	None	This site is located in the same area as site 006. No contaminants were found in this area. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
55	015	Building 382 (gasoline spills)	Reported spills of gasoline and oil near Building 382 and Warehouse 7.	Mid-1960s	4 borings drilled to 11.5 feet below surface. Samples collected at 2, 6, and 11 feet below surface. Samples analyzed for TPH. None detected.	None	None	No gasoline or oil found in the samples analyzed. No risk to human health and the environment. No action required.
80	016	Paint, Residue and Waste Oil Dump	Site was reportedly used as a dump for paints, residues and waste oils. Site was indicated based on interviews with Depot employees and not on physical evidence or sampling.	1946	A shallow soil gas survey was conducted to locate the site. Report maximum total volatile hydrocarbons of 4 µg/l found at depth of 0-3.5 feet below surface. Samples were collected at 5-foot intervals. Eight confirmation soil borings were drilled to 16.5 feet below surface. Samples were analyzed for VOCs, semi-VOCs, pesticides, TPH, and metals.	4,4'-DDE (.085 mg/kg) dieldrin (0.1 mg/kg)	None	Exact location of the reported site could not be confirmed. Risk assessment indicates pesticide levels in the area present no threat to human health or the environment. No action required.
59	017	Outdoor Storage of Wastes	Site was used for the storage of drummed hazardous waste containing metals.	1950s-1970s	6 borings drilled to 6.5 feet below surface. Samples collected at 1, 3, 5, and 6 feet below surface. Samples analyzed for metals. Soil sample from 83 feet below surface analyzed for VOCs.	None	None	Metals found at background levels. No VOCs detected. No action required.
80, 81, 87	018	Old Morrison Creek (east portion)	Portion of Old Morrison Creek that flowed through the eastern portion of the Depot based on past aerial photos. Potential contaminants that may have leached into the creek are petroleum wastes, oils and lubricants, and by-products of paint sludges.	1940s-?	4 borings drilled to 6.5 feet below surface and samples collected at 2, 4, and 6 feet. Samples analyzed for TPH and metals. No TPH detected.	None	None	Metals found at background levels. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
52	019	Fill Area with Numerous Vehicles	The site was reportedly used for open storage of vehicles and equipment, and possibly is contaminated with petroleum hydrocarbons.	1957-1968	<p>1) 4 borings drilled to 11.5 feet below surface. Samples collected at 1, 5, 6, and 11 feet. Samples analyzed for VOCs, semi-VOCs, TPH. TPH found in one sample at 6 feet.</p> <p>2) A shallow soil gas survey was conducted to verify the extent of TPH. No TPH reported. TCE (0.03 µg/l) and PCE (2 µg/l) were found at depth of 1 foot.</p> <p>3) 2 confirmation borings drilled to 16.5 feet below surface. Samples were collected at 5-foot intervals. Samples analyzed for VOCs, pesticides, TPH. TCE, PCE, BTEX not detected. Pesticides detected.</p>	<p>1) TPH at 140 mg/kg</p> <p>2) Trichloroethene, tetrachloroethene</p> <p>3) 4,4'-DDD (0.041 mg/kg) 4,4'-DDE (0.017 mg/kg) 4,4'-DDT (0.023 mg/kg) dieldrin (0.034 mg/kg) chlordane (0.004 mg/kg) Freon 113 (0.015 mg/kg)</p>	None	Unknown TPH was an isolated event. Additional investigation did not confirm the presence of TPH. VOCs not detected in confirmation borings. Pesticide levels in the area present no threat to human health or the environment. No action required.
88	020	Trash Disposal Areas	Trenches located south of Burn Pits with construction debris.	Early 1950s to mid-1960s	<p>IR survey showed no anomalies. No trenches visible in aerial photos. Sites are located near residential housing for Depot commander, and are not likely hazardous waste disposal sites.</p>	None	None	No evidence of hazardous waste disposal at these sites. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
32	021	Cyanide Leach Field (Building 320)	Reported leach field from the cyanide sump located east of the site. The leach field was reported to not work due to low permeability of the soil.	1963–1977	In 1990, 9 borings drilled to 4.5 to 5.5 feet below surface. Samples collected at 1.5, 4.5 feet below surface. Samples analyzed for metals and cyanide. Cyanide detected at 1.5 and 4.5 feet below surface. In 1993, 1 boring drilled. Samples collected at 26.5, 36.5, 66.5, 76.5 feet below surface. Samples analyzed for VOCs. None detected.	Cyanide (0.78 mg/kg)	None	Metals are found at background levels. Cyanide level found presents no threat to human health or the environment. Leach field piping has been exposed and sampled for metals and cyanide. Surrounding soil has been sampled. Metals are at background levels. No further action required.
91	022	Radioactive Waste Disposal Area	Reported dump area for radioactive material in southwest corner of Depot.	Late 1940s	A surface survey to screen for radioactivity and ground penetrating radar has been conducted in suspected area. None detected above background levels. Aerial photo review shows no evidence of trenching or pits. Groundwater analyzed for radium. None detected. Random borings show no evidence of radioactivity.	None	None	No visual evidence that site existed. Site does not show elevated radioactivity. No action required.
91	023	Dispensary Waste Area	Reported dump area in southwest corner of Depot.	1960s	Visual inspection of area and aerial photos show no evidence of site. Documented waste disposal practices show disposal in Burn Pits or off-base. IR survey conducted. No anomalies found.	None	None	No indication the site ever existed. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
99	024	Petroleum Sludge Disposal Area	Reported dumping of gasoline tank sludge south of the running track.	Late 1950s	Two borings drilled. Samples collected at 0.5 feet below surface. Analyzed for TPH, lead. No TPH found. Lead at background levels.	None	None	Sampling found no evidence of contamination. No action required.
99	025	Previous Oil Dump Area	Reported dumping of oil in the southeast corner of Depot.	Mid-1960s	Two near surface soil samples collected and analyzed for oil and grease. None detected.	None	None	No oil or grease found in soil samples. No action required.
29	026	Former Secondary Sewage Treatment Plant	Sewage treatment plant west of Building 320 received wastewater from plating operations.	1940s-1972	5 borings drilled to 10 feet below surface. 18 samples analyzed for metals.	None	None	Metals concentrations in soil typical of background. No action required.
98	027	AAFES Drain Well	Surface drain well southeast of Building 699, at the AAFES gasoline station.	Unknown to 1995	GPR survey in 1994. Drain well and pipe removed. Samples collected from sides and bottom of excavation and below drain pipe. Samples analyzed for TPH.	None	None	Soil samples give no evidence of contamination. Drain well has been removed. No action required.
12	028	Rail Yard Engine Shed (Locomotive Repair Area)	Site consists of two buildings used for the maintenance of the Depot's locomotive switch engine.	1940s-1995	IR survey reported elevated temperatures beneath concrete pad south of Building 205. Soil samples indicated gasoline and diesel to 10 feet below surface.	Gasoline, diesel	None	An in-situ bioremediation pilot test was conducted at this area. The Railroad is not under CERCLA jurisdiction, per CERCLA Section 101, because only petroleum hydrocarbons were present. During the pilot test, diesel concentrations decreased from a high of 7,300 mg/kg to <25 mg/kg. Residual levels remaining present no risk to human health or environment.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
63	029	Building 420 Chromic Acid Spill	Building 420 spill of chromic acid.	1978	Based on interviews, spill occurred in NE corner of building and was contained. Two borings drilled outside building to approx. 7 feet below surface. Soil samples analyzed for chromium. Downgradient wells sampled. No evidence of contamination.	None	None	Chromium was detected at 26 mg/kg, a level typical of background. No chromium in groundwater downgradient of the site. No action required.
37	030	1,000-Gallon Solvent Tank No. 3	UST containing solvents south of Building 348.	Mid-1950s to late 1970s	Downgradient wells sampled and analyzed for VOCs. Record search shows no evidence this tank existed.	None	None	No evidence of a UST, or of groundwater contamination from tank. No action required.
20	031	5,000-gallon Hazardous Waste Tank No. 1	Tank No. 1 was a UST used for the storage of battery acid from the mid-1950s to the late 1970s. Tank was removed in 1986. Site is covered with concrete.	1950s-1970s	Five borings drilled to 21.5 feet below surface. Samples collected at 4, 6, 11, 16, and 21 feet below surface. Samples analyzed for VOCs, semi-VOCs, organochlorine pesticides and PCBs. None detected.	None	None	No action required.
37	032	470-Gallon Battery Acid Storage Tank No. 4	UST containing battery acid south of Building 348. Tank removed in 1986.	Mid-1950s to late 1970s	Tank was located in a below-grade cement-floored enclosure. No stains on cement. Downgradient wells show no evidence of contamination from tank.	None	None	No evidence of leakage from tank, or of groundwater contamination. No action required.
78	033	Sewage Outfall	Outfall at western edge of Depot, north of Oxidation Lagoons.	Late 1950s to late 1960s	Outfall removed when Morrison Creek was widened and paved in 1980s.	None	None	Site no longer exists. No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
32, 63, 68	034	Building 320, Plating Spill	Spills from plating operations, containing metals.	1950s to 1970s	2 borings drilled to 40 feet below surface. 6 samples collected and analyzed for metals. Dowgradient wells analyzed for metals. Additional samples taken during investigation of site 021, and analyzed for metals.	None	None	Contaminated soil removed at time of spill. Metals at background levels. No action required.
78, 79, 80, 81, 87	039	Morrison Creek	Creek running around south perimeter of Depot may have received wastes from industrial processes.	1940s to early 1980s	Creek was widened and paved in 1980s. Contaminated soil was removed. Depot had industrial waste disposal facilities in place prior to contaminated soil removal.	None	None	No action required.
3	040	Possible Open Storage Area (Building 150)	Open storage area for construction materials, west of Building 150.	1947-1950	Site stored construction materials only.	None	None	No action required.
22	041	Possible Open Storage Area (Buildings 246 & 248)	Open storage area for construction materials between Buildings 246 and 248.	1947-1950	Site stored construction materials only.	None	None	No action required.
81	042	Possible Open Storage Area (Building 426)	Open storage area for construction materials southeast of Building 426.	1947 to 1950	Area was paved by 1946, prior to storage. IR survey shows no anomalies.	None	None	No action required.
87	043	Possible Open Storage Area (Building 555)	Open storage area for construction materials south of Building 555.	1947 to early 1960s	Site stored construction materials only.	None	None	No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
99	044	Possible Dump Site	Open field used for vehicular activity.	1948-1950	IR survey shows no anomalies. Groundwater sample collected west of site, and analyzed for VOCs. None detected. Aerial photos do not show disposal activities.	None	None	No groundwater contamination found. No action required.
96	045	Large Disturbed Area	Surface disturbance near eastern border, reportedly the site of swamp vehicle testing.	1947 to early 1960s	Swamp vehicle testing area only.	None	None	No action required.
76	046	Possible Trench	Surface depression	Early 1950s	Trench visible for less than 3 years on aerial photos. Appears to be construction storage.	None	None	No action required.
81	047	Possible Fill Activity	Scarred surface area north of Oxidation Lagoons.	Early 1950s	Soil gas investigation and soil sampling in 1991/92. Samples analyzed for VOCs, SVOCs, TPH. Infrared survey shows no anomalies.	None	None	No contaminants detected during sampling. No action required.
81	048	Possible Dump Site	Open storage area for construction debris, NE of Oxidation Lagoons, near the Battery Disposal Well (BDW).	Early 1950s	This area is the surface expression of activity at the BDW. Topsoil has been removed from the site. No groundwater contamination found.	None	None	No action required.
80	049	Possible Fill Material	Soil piles from construction, south of Oxidation Lagoons.	Early 1950s to late 1970s	Area was investigated during Burn Pits RI. Samples analyzed for metals. Elevated lead found at surface.	Lead	None	Contaminants are associated with transfer of material from Building 300 to the South Post Burn Pits. Burn Pits area is under remediation and will include the area around site 049. No further action required.
87	050	Excavation Activity	Soil piles from construction, between Building 555 and the eastern site boundary.	Early 1960s	Construction materials only stored at site.	None	None	No action required.

Table 3-4. Site Summaries By Area Status

EBS Study Area	Site No.	Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Risk ^o	Status
87	051	Standing Liquid	Area of standing water near eastern border, seen in aerial photo.	Mid-1960s	Standing water is a common occurrence due to hardpan layer. This was not a disposal area.	None	None	No action required.
81	052	Scarred Stressed Area	Surface scarring northeast of Oxidation Lagoons.	Mid-1960s	Area investigated during investigation of site 010. 8 borings drilled to 21.5 feet below surface. Samples collected from 1.5 to 21 feet below surface. Analyzed for VOCs, SVOCs, metals.	None	None	Metals at background levels. Soil samples indicate no contamination. No action required.
38	054	Contractor's Storage Area	Site is located north of Building 348 and has been reportedly used for the storage of construction materials and some waste materials by contractors working at Depot. The site is covered with grassy vegetation.	1970s-1980s	6 borings were drilled to 11.5 feet below surface. Samples were collected at 2, 5.5, and 11 feet. Samples were analyzed for VOCs, semi-VOCs, metals. No VOCs, or semi-VOCs were detected.	None	None	Metals concentrations found at background levels. No action required.

^oRisk to Human Health and the Environment = Baseline Human Health Risk Prior to Remediation

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Groundwater	Groundwater ingestion, inhalation of chemical vapors from groundwater	VOCs	NA	NA	On-site groundwater extraction and treatment system, 1989 to current.	Known ground-water users in vicinity of SADA, including residents and industries	Unknown
Tank 2 005	Groundwater ingestion, inhalation of chemical vapors.	VOCs, PAHs, pesticides (based on groundwater modeling).	VOCs, PAHs, pesticides	NA	None; site was remediated by SVS in 1992 and is capped with concrete.	On-site buildings.	Possible industrial or recreational use. Residential use is unlikely.
Oxidation Lagoons 001	Soil ingestion, dermal absorption of soil, groundwater ingestion.	Metals (based on groundwater modeling).	Metals	NA	None; scheduled for cleanup in 1995.	None (currently). Burn Pits OU located approximately 200 yards to south.	Possible industrial or recreational use. Residential use is unlikely.
South Post Burn Pits 002	Ingestion of soil, inhalation of dust, ingestion of groundwater, inhalation of vapors from groundwater.	VOCs (based on groundwater modeling).	Metals, VOCs, PCBs, dioxins	NA	None; scheduled for cleanup in 1995.	None. Oxidation Lagoons OU located approximately 200 yards to north.	Possible industrial or recreational use. Residential use is unlikely.
Pesticide Mix Area 008	Dermal absorption of soil.	NA	Organochlorine pesticides	NA	None; contaminated soil removed from site in April 1993	Buildings.	Possible industrial or recreational use. Residential use is unlikely.
Battery Disposal Well 009	No significant health risks.	NA	Metals, PAHs	NA	None; contaminated soil removed and placed in bins in Summer 1993.	None	Possible industrial or recreational use. Residential use is unlikely.
Building 300 Old Burn Pits 007	Ingestion of soil, inhalation of dust, dermal absorption of soil.	None (based on groundwater modeling results).	Metals VOCs, PAHs, PCBs, dioxins, pesticides	NA	None	None	Possible industrial or recreational use. Residential use is unlikely.

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Freon 113 Area	Groundwater ingestion, inhalation of chemical vapors from groundwater.	Freon 113, TCE, chloroform	Freon 113, TCE chloroform	NA	Buildings 320, 420	Buildings	Possible industrial or recreational use. Residential use is unlikely.
Parking Lot 3	Groundwater ingestion, inhalation of chemical vapors from groundwater	TCE, PCE, chloroform	TCE, PCE, chloroform	NA	Air sparging feasibility study completed.	Buildings	Possible industrial or recreational use. Residential use is unlikely.
Firefighter Training Area 006	NA	NA	None found.	NA	None	None	Possible industrial or recreational use. Residential use is unlikely.
Contractor Spoils Area	No significant health risks.	NA	Metals, PAHs (low levels).	NA	Storage of contractor waste.	Open field.	Possible industrial or recreational use. Residential use is unlikely.
Railyard Engine Shed (Locomotive Repair Area) 028	No significant health risks.	NA	PAHs (low levels).	NA	Bioventing completed.		Possible industrial or recreational use. Residential use is unlikely.
Small Shallow Lagoon 003	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Sludge Piles 004	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Trenches 010	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Two Trenches 011	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Building 315 (Cyanide Sump) 012	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Building 316 (Acid Sump) 013	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Shallow Lagoons 014	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Building 382 (gasoline spills) 015	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Paint, Residue and Waste Oil Dump 016	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Outdoor Storage of Wastes 017	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Old Morrison Creek (east portion) 018	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Fill Area with Numerous Vehicles 019	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Trash Disposal Area 020	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Cyanide Leach Field (Building 320) 021	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Radioactive Waste Disposal Area 022	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Dispensing Waste Area 023	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Petroleum Sludge Disposal Area 024	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Previous Oil Dump Area 025	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Former Secondary Sewage Treatment Plant 026	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
AAFES Drain Well 027	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Building 420 Chromic Acid Spill 029	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
1,000 gallon solvent Tank 3 030	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
5,000 gallon Hazardous Waste Tank 1 031	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
500 gallon Battery Acid Storage Tank 4 032	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Sewage Outfall 033	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Building 320, Plating Spill 034	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Morrison Creek 039	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Possible Open Storage Area (B.150) 040	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Open Storage Area (B.246 and 248) 041	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Open Storage Area (B.426) 042	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Open Storage Area (B.555) 043	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Dump Site 044	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Large Distributed Area 045	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Trench 046	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Fill Activity 047	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Dump Site 048	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Possible Fill Material 049	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.

Table 3-5. Future Land Use Risk Assessment for Development of Remedy Selections

Site ID	Risks*	Contaminants			Depot Use	Adjacent Uses	Anticipated Uses
		Groundwater	Soil	Surface/ Sediment			
Excavation Activity 050	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Standing Liquid 051	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Scarred Stressed Area 052	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.
Contractor's Storage Area 054	No significant health risks.	NA	NA	NA	Not used.		Possible industrial or recreational use. Residential use is unlikely.

Table 3-6. Human Health Criteria

Contaminant	Concentration	
	Residential Soil, mg/kg	Tap Water, µg/L
Trichloroethylene (TCE)	7.1	1.6
Tetrachloroethene (PCE)	7.0	1.1
cis – 1,2–Dichloroethylene (c-1,2-DCE)	59	61
trans – 1,2–Dichloroethylene (t-1,2-DCE)	170	120
1,2–Dichloroethane	0.44	0.12
Carbon Tetrachloride	0.47	0.17
Freon 113	3,600	59,000
Chloroform	0.53	0.16

Source: USEPA Region IX Preliminary Remediation Goals (PRGs), First Quarter 1995 (USEPA, Region IX, February 1995).

Table 3-7. Mission/Operational-Related Compliance Projects

Project	Status	Regulatory Program
	<p>Sacramento Army Depot no longer has an active maintenance mission, so no mission/operational-related compliance activities are included. Between April 1994 and March 1995 the Depot was operated by a small transition force. The Depot's mission is closure. All tenants have moved from the site. A small environmental staff remains to complete the environmental cleanup.</p>	

Table 3-8. Closure-Related Compliance Projects

Project	Status	Regulatory Program
UST	All USTs have been removed. Closure reports due by October 1995.	California State Regulation County Regulations
RCRA-Permitted Facilities	Closure plans approved, cleanup completed July 1995. Closure reports due by November 1995.	RCRA
EBS Building Surveys	Completed in October 1995.	Army component policy for closure
Hazardous Material and Waste Management	Completed.	RCRA
Asbestos and Lead Management	Completed.	Army component policy for closure
Permit Maintenance	Only the long-term groundwater cleanup permit is being maintained.	Water (NPDES), Air Credits, Sewer Permits

**Table 3-9.
Compliance Expedited Actions Status and Underground Storage Tank Inventory**

Tank Number	EBS Study Areas	Location (Building)	Year Installed	Capacity (gallons)	Substance Stored	Status	Future Actions
UK-1	1	109	Unknown	600	Gasoline	Removed	None
200-1	20	242	Unknown	5,000	Cleaning solvent	Removed	None
200-2	12	205	1945	12,000	Diesel	Removed	None
200-3	15	245	1981	5,000	Diesel	Removed	None
200-4	15	245	1981	550	Diesel	Removed	None
200-1	20	242	1985	4,000	Diesel	Removed	None
250-1	14	245	1985	4,000	Diesel	Removed	None
300-1 ^①	28	300	1957	1,350	Decontamination	Removed	None
300-2 ^①	28	300	1957	1,350	Decontamination	Removed	None
300-3 ^①	28	300	1957	2,300	Filter	Removed	None
300-4	28	300	1981	5,000	Diesel	Removed	None
300-5	32	320	1968	1,000	Hazardous waste storage	Removed	None
300-6	32	320	1968	550	Diesel	Removed	None ^②
300-7	32	320	1968	550	Hazardous waste storage	Removed	None ^②
300-8A ^③	32	320	1968	1,000	Fuel tank	Removed	None
300-8	32	320	1968	1,000	Hazardous waste	Removed	None
300-9	40	352	1945	12,000	Fuel oil	Removed	None
300-10	40	352	1945	12,000	Fuel oil	Removed	None
300-11	37	348	1979	470	Waste battery acid	Removed	None
300-12	40	354	1974	50,000	Fuel oil	Removed	None
300-13	40	354	1974	50,000	Fuel oil	Removed	None
300-14	40	354	1974	50,000	Fuel oil	Removed	None
300-15	40	354	1974	50,000	Fuel oil	Removed	None
300-16 ^④	50	360	Unknown	500	Solvents and fuels	Removed	None
300-17 ^⑤	55	382	1978	2,000	Diesel	Removed	None
300-18	56	384	1976	12,000	Unleaded gas	Removed	None
300-19	56	384	1976	12,000	Unleaded gas	Removed	None
300-20	56	384	1976	12,000	Unleaded gas	Removed	None
600-1	99	650	Unknown	5,000	Diesel	Removed	None
600-2	99	680	Unknown	5,000	Diesel	Removed	None
600-3	98	699	1964	285	Waste oil	Removed	None
600-4	98	699	Unknown	8,000	Unleaded gas	Removed	None
600-5	98	699	Unknown	8,000	Unleaded gas	Removed	None
600-6	98	699	Unknown	8,000	Unleaded gas	Removed	None

^① Sump.

^② The county has stated that the back filling of the pit will be performed with the understanding that if the site closure committee decides that additional work is required, it may be necessary to re-excavate the site.

^③ May never have existed.

^④ Depot believes that if it ever existed, it was probably a mobile aboveground tank.

^⑤ 1978 drawings show this tank associated with the boiler in Building 382. A geophysical survey is being conducted at the site. Preliminary results do not indicate the presence of a UST.

Table 3-10. Historic Aboveground Storage Tank Inventory

Study Area	Gallons	Contents	Status
1	185	Diesel Fuel	Two diesel storage tanks in Facilities 101 and 102 (pump houses) were removed in 1987.
	50	Non-RCRA Hazardous Waste Liquid	Removed.
5	20	Gasoline Fuel	Fuel tank for emergency generator (Facility 165) Left in place.
	800	Diesel Fuel	Fuel tank for emergency generator (Facility 156) Left in place.
	500	Diesel Fuel	Fuel tank for emergency generator (Facility 163). Left in place.
24	350	Liquid Foam Material	Two tanks located in SE corner of Building 251, Bay 5. Removed.
27	500	Diesel Fuel	Fuel tank for emergency generator in Building 257, Bay 1. Left in place.
29	120,000	Treated rinsewater	East of Building 300 (Tank 1). Transferred to the City of Sacramento December 1995.
	120,000	Treated rinsewater	East of Building 300 (Tank 2). Transferred to the City of Sacramento December 1995.
33	50 cubic feet	Propane	Believed to supply fuel to hot water washer. Left in place.
37	1,000	Waste Solvent	Located outside the SW corner of Building 348. Removed in the early 1980s.
	100	Gasoline	Tank moved from SA 45. Used to fuel lawnmowers operated by maintenance dept.
	470	Battery Acid	The fiberglass tank was located in a below-grade cement-floored enclosure south of Building 348. It was removed in 1986 and replaced with an aboveground tank (same size), which is inactive and in storage.
38	45,000	Liquid Petroleum Gas (LPG)	Backup fuel tank for main boiler room. Left in place. Transferred to the City of Sacramento March 1995.
45	100	Gasoline	Used to fuel lawn mowers. Removed in 1993.
53	10 x 6 x 50 ft	Wood Preservation	Exact location unknown. If it existed, it was removed.
55	30	Unknown	Removed
56	1,000	Propane	Left in place for transfer
62	400	Battery Acid	Removed

Table 3-10. Historic Aboveground Storage Tank Inventory

Study Area	Gallons	Contents	Status
63	710	Sludge Dewatering	Abandoned and removed.
	2,000	Caustic	Abandoned and removed.
	500	Sulfuric Acid	Abandoned and removed.
	3,050	Effluent	Tank 400-3. Removed.
	24,000	Effluent	Tank 400-1. Removed.
	1,064	Spill	Tank 400-2. Removed.
	2,500	Cyanide	Three 2,500 gallon tanks. Removed.
	2,400	Chrome	Four 2,400 gallon tanks. Removed.
79	400	Diesel Tank	Two 400 gallon tanks. Removed in 1993
83	500	Hydrogen Peroxide	Associated with the GWTP. Left in place.
84	Unknown	Degreaser	All six tanks have been removed
	Unknown	Solvent	Abandoned and removed.
85	Unknown	Storage Tank	Located in Building 555. Abandoned and left in place.

Table 3-11. Historic Non-Permitted Accumulation and Storage Areas

Bldg. No.	Building Name	Hazardous Materials/Wastes Stored
154	Health Clinic	Alcohol, biologicals
182 & 183	Army Reserve Center Vehicle Maintenance	Petroleum, antifreeze, solvents, paints
215	Flammable Materials Storage	Paints, adhesives, solvents, toners
241	Storage Shed	Instapac (organic)
242	General Purpose Warehouse	Radioactive materials
242-2	Property Disposal Office	Various hazardous materials
243	Flammable Materials Storage	Pesticides, oils, antifreeze, solvents
244-4	General Purpose Warehouse	Radioactive materials
244 W	Accumulation/Collection Satellite	Oils, antifreeze
247	Cold Storage Warehouse	Dry-cell, mercury batteries
249	Flammable Materials Storehouse	Solvents, paints
251-5	Self-Service Supply Center	Organic cleaners, detergents, adhesives, lube oils
251-5 S	Conex Box	Adhesives, solvents
257 N	Accumulation/Collection Satellite	Thinners, paints
300	Electrical Maintenance Shop	Radioactive materials
303	Treated Wastewater Holding Tanks	Plating wastewater
308	Treated Wastewater Holding Tanks	Plating wastewater
310	Flammable Materials Storehouse	Oils, solvents
325	General Purpose Laboratory	Acids, bases, solvents
330 SE	Open Storage	Hardeners (organics)
348	Vehicle Maintenance Shop	Petroleum products, antifreeze, solvents, paints
352	Boiler Plant	Oils, acids, caustics
354 SE	Fenced Storage Area	Compressed gas cylinders (chlorine acetylene, sulfur dioxide, argon, CO ₂ , helium, oxygen)
360	Facilities Engineering Maintenance Shop	Oils, solvents, paints
382 W	Accumulation/Collection Satellite	Oils, antifreeze
384	Gas Station with Building	Gasoline, LPG
411	Hazardous Materials Storage	Various hazardous materials
415	Hazardous Materials Storage Facility	Solvents, refrigerants, batteries, acids caustics, plating chemicals
420 W	Accumulation/Collection Satellite	Paint sludges, solvents, empty cans
555	Electro-Optics Facility	Radioactive substances
558	Storage Shed	Flammable materials (war reserve)
601	Skill Center/Auto Hobby Shop	Oils, solvents
680	Print Shop	Developer, fixer
699	Service Station	Oils, antifreeze
	Navy/Marine Center Vehicle Maintenance Shop	Petroleum, antifreeze, solvents, paints

Table 3-12. Polychlorinated Biphenyls (PCBs) Previously Located at the Depot

Study Area	Number	Transformer Size	Status
1		5-kVA	Located on Pole 109. Removed November 1990.
4	84791 6814695 6815040 K465938K7	Unknown	These four transformers were removed from Building 150 in December 1987 and replaced with non-PCB transformers.
6	K465937K7 K465938K7 K465939K7 66AD6151	Unknown	The first three transformers were removed from Pole 140a, the fourth was removed from Pole 140b. All were removed in January 1991.
8	205619K73 205629K73 205621K73	Unknown	Located on Pole 148. Removed January 1991.
11	7696052 7696053	15-kVA	Located on Pole 221. Removed November 1990.
12	1310865 1310914 1310988	Unknown	Located on Pole 214. Removed June 1989.
24	Unknown	Unknown	Two interviewees stated that at one time PCB transformers were worked on in Bay 3 and possibly Bay 4 of Building 251. Transformers were reportedly drained and refilled in the early 1950s.
26	360000K 360004K	150-kVA	Located in Bays 3 and 5 of Building 255. Removed November 1988.
27	7667154 7793155 7666615	Unknown	Located on Poles 331 and 332. Removed April 1991.
	L478814	300-kVA	Located in Building 257. Removed September 1990.
28	NA	NA	Soil borings around the perimeter of Building 300 indicated the presence of PCBs above laboratory reporting limits (Arochlor 1260 at 360 µg/kg and Arochlor 1254 at 1,800 µg/kg).
28	143934	225-kVA	Located in Building 300. Removed September 1990.
29	7795160 7794037 7794041	Unknown	Located on Pole 314. Removed in March 1988.
35		Unknown	Located in the land area. Removed in July 1989.
36		Unknown	Located in the land area. Removed in January 1989.
37	R8194384 L6815044 C6814689	Unknown	Located in building 348. Removed in September 1990.

Table 3-12. Polychlorinated Biphenyls (PCBs) Previously Located at the Depot

Study Area	Number	Transformer Size	Status
42	7666615 7667154 7793155	Unknown	Located on Pole 331. Removed in April 1991.
53	65AB3869 65AB3870 65AB3871	10-kVA	Located on Pole 368. Removed in April 1991.
59	NA	NA	Cell 1 of Building 412 is used to store PCBs.
63	H885600	Unknown	Located in Building 420. Removed in September 1990.
68		225 kVA	Located in Building 423. Removed 9/90.
72	Unknown	Unknown	Two persons interviewed indicated a transformer located near Facility 450 contained PCBs. It was removed in 1989.
73	7794249	10-kVA	Located on Pole 375. Removed in April 1991.
76	J765801K7 J765802K7 J765803K7	25-kVA	Located on Pole 432. Removed in October 1990.
79	85IH495061	75-kVA	Located outside Building 532. Removed in October 1990.
85	Unknown	Unknown	Four transformers were located in building 555. All were removed in 1990.
98	308715-65	25-kVA	Located on Pole 660. Removed in October 1990.

Table 3-13. Buildings Where Friable Asbestos Was Located

Building Number	Building Name	Action
140	Community Service Club	Abated in 1995
149	Restaurant/Credit Union	Abated in 1995
150	Post HQ Building	Encapsulated in 1995
153	Administration Building/Security	Removed in 1988
154	Clinic	Abated in 1995
156	Generator	Encapsulated in 1994
180	Army Reserve Center	Removed in 1992
242	General Purpose Warehouse	Removed in 1994
246	General Purpose Warehouse	Abated in 1994
247	Cold Storage	Encapsulated in 1994
248	General Purpose Warehouse	Abated in 1994
251	General Purpose Warehouse	Abated in 1994
255	General Purpose Warehouse	Abated in 1994
257	General Purpose Warehouse	Abated in 1994
300	Electrical Maintenance Shop	Abated or encapsulated in 1994
301	Pumphouse	Removed or encapsulated in 1994
320	Electrical Maintenance Shop	Abated in 1994
330	Electrical Maintenance Shop	Abated in 1994
348	Motor Repair Shop	Removed by 1994
352	Boiler Plant	Encapsulated in 1995
353	Learning Resource Center	Abated in 1995
354	Facilities Engineering Storehouse	Encapsulated by 1995
355	Facilities Engineering Maintenance Shop	Removed by 1994
420	Electrical Maintenance/Plating Shop	Abated in 1994
439	Electrical Maintenance Shop	Abated by 1995
600	Commander's Residence	Abated in 1993
603	Facility House	Abated in 1994
672	Moral Support Facility	Encapsulated by 1995
Navy	Administration Building	Abated by the Navy in 1994

Note: ACBMs were removed as ongoing building maintenance, repairs, and modification dictated

Table 3-14. Surface Water Standards

Constituent/Parameter		Concentration Limit Criteria	
Criteria for Water			
	<p>Surface water standards were part of the Depot's NPDES Permit and are not a subject of, or threat from, the Depot closure or remediation projects. Domestic waters are supplied by the City of Sacramento under required drinking water standards.</p>		
Radionuclides			
	<p>There are no radionuclides in surface or drinking waters at or above regulatory limits.</p>		

ENVIRONMENTAL TIMELINE

For Sacramento Army Depot

-
- 1979 • United States Army Environmental Hygiene Agency (AEHA) initiates Phase I of Sacramento Army Depot Installation Restoration Program (IRP). Phase I Environmental Assessment of the Depot IRP is initiated.
• Records search of disposal practices conducted.

 - 1980 • Phase I of Depot IRP continues.
• Site survey and sampling conducted.

 - 1981 to 1995 • Installation of groundwater monitoring wells.

 - 1983 • Phase I of Depot IRP continues and Geohydrologic Study is conducted, which includes groundwater sampling and records search and review of 12 sites.

 - 1983 to 1984 • Depot investigates off-site groundwater contamination.

 - 1986 • Four underground storage tanks are removed from the ground. One tank, Tank 2, is identified as a site with potential contamination.
• The Technical Review Committee is formed.
• The initial Community Relations Plan is developed.
• The Investigation Study, part of the Phase II IRP, is completed to confirm past investigations and to assess remediation alternatives.

 - 1987 • The Soil and Groundwater Assessment, part of the Phase II IRP, is completed.
• The proposed plan to complete IRP is developed.
• Depot is placed on the U.S. EPA's National Priority List (NPL).

 - 1988 • The Remedial Investigation is completed for groundwater in the southwest portion of the Depot.
• The Feasibility Study for the treatment of the southwest groundwater plume is completed.
• Army signs Federal Facility Agreement.
• Depot Community Relations Plan is updated.

 - 1989 • The Record of Decision (ROD) for the selected remediation alternative is signed for the southwest groundwater plume.
• Southpost Groundwater Treatment System is constructed and groundwater remediation started.
• Seven other sites are identified as top priority for investigation and broken into two categories:
 - (1) *Sites for which enough information exists to initiate Feasibility Studies to develop treatment alternatives:*
Tank 2, Oxidation Lagoons, Burn Pits
 - (2) *Sites for which Remedial Investigations must be completed prior to initiating Feasibility Studies:*
Building 300 Old Burn Pits, Dry Cell Battery Disposal Area, Pesticide Mix Area, Firefighter Training Area

FIGURE 3-1

ENVIRONMENTAL TIMELINE
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

ENVIRONMENTAL TIMELINE

For Sacramento Army Depot (Continued)

- 1990 • Start field investigations of the Remedial Investigation sites.

- 1991 • The ROD to clean up Tank 2 using soil ventilation technology is signed.

- 1992 • The proposed cleanup plan for the Oxidation Lagoons is developed.
 • The Feasibility Study for the Burn Pits is completed.
 • The proposed cleanup plan for the Burn Pits is developed
 • The Depot's Community Relations Plan is updated.
 • Additional field investigations are being conducted at the Building 300, Burn Pits site.
 • BAT Probe sampling conducted at Parking Lot 3.

- 1993 • ROD for the Oxidation Lagoons signed and the Soil Washing Pilot Test begins.
 • Burn Pits ROD is signed.
 • Tank 2 cleanup complete.
 • Complete field investigation of the Pesticide Mix Area, conclude it requires "No Further Action".
 • Field investigation conducted at Parking Lot 3 indicates VOCs presence in soil and groundwater.
 • Field investigation conducted at the Freon site. VOCs (primarily Freon 113) detected.

- 1994 • Installation of Air Sparging/Soil Venting pilot program at Parking Lot 3.
 • Pilot program completed at Parking Lot 3.
 • Installation of Air Sparging/Soil Venting pilot program begins at the Freon site.
 • Pilot program completed at Freon site.
 • Restoration Advisory Board established.

- 1994 to 1995 • Soil venting remediation at the Burn Pits commenced to remediate VOCs.
 • Initiate Railyard Engine Shed Bio-venting pilot program.

- 1995 • Basewide ROD is signed.
 • Environmental Impact Statement (EIS) ROD is signed.
 • First FOST (Finding of Suitability to Transfer) is signed.
 • Proposed installation of horizontal groundwater extraction wells
 • Proposed implementation of Basewide Remedial Action.
 • Transfer of clean parcels to the City of Sacramento.

- 1995 to 1996 • Remediation of Oxidation Lagoons, Burn Pits, and groundwater continues.
 • Projected deletion from NPL, scheduled for December 1996.
 • Final transfer of remaining property.

- 1997 to 2000 • Remediation of groundwater continues.

- 2002 • Groundwater remediation completed.

FIGURE 3-1 (Cont.)

ENVIRONMENTAL TIMELINE
 SACRAMENTO ARMY DEPOT
 SACRAMENTO, CALIFORNIA

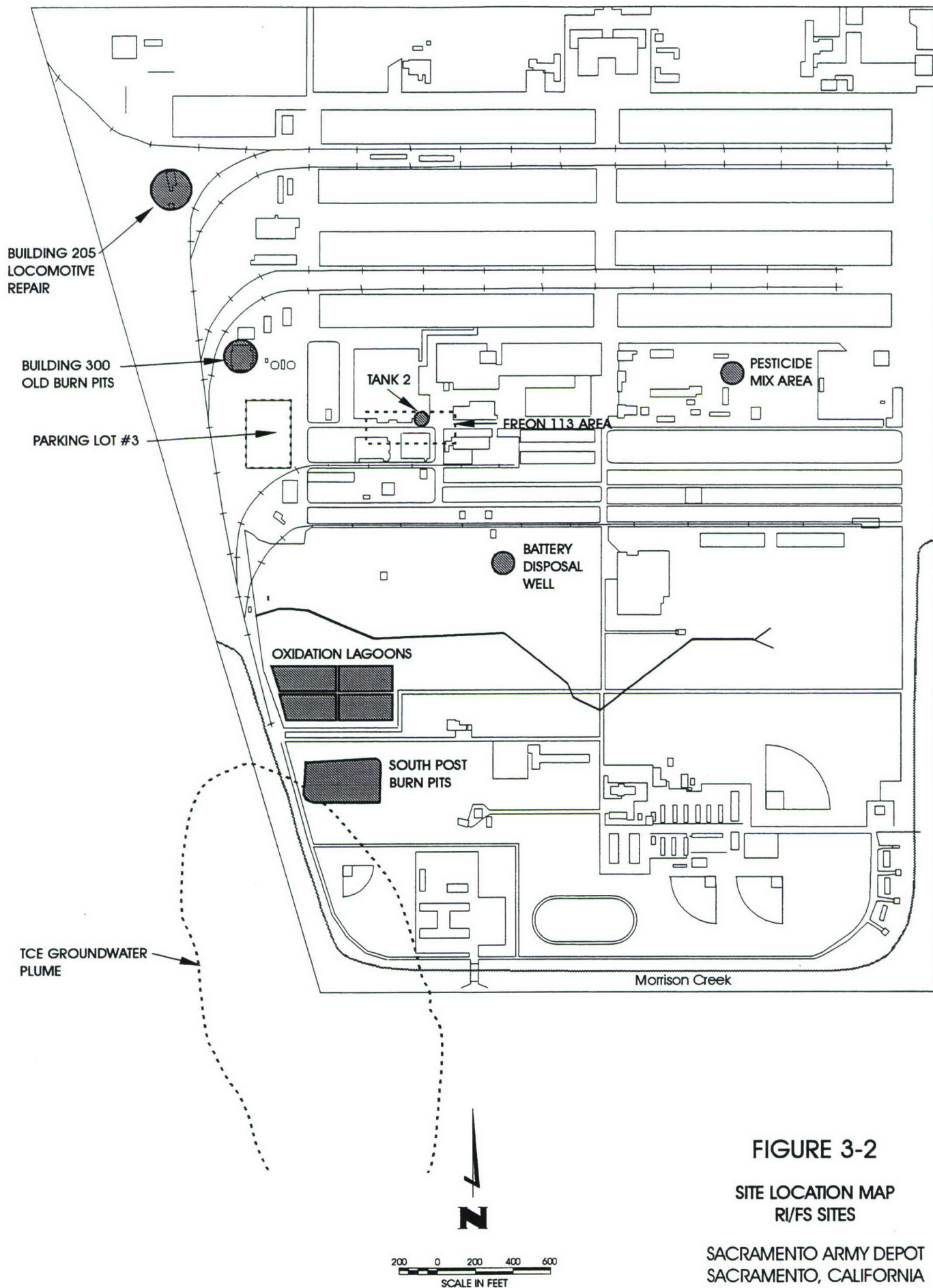


FIGURE 3-2

SITE LOCATION MAP
RI/FS SITES

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

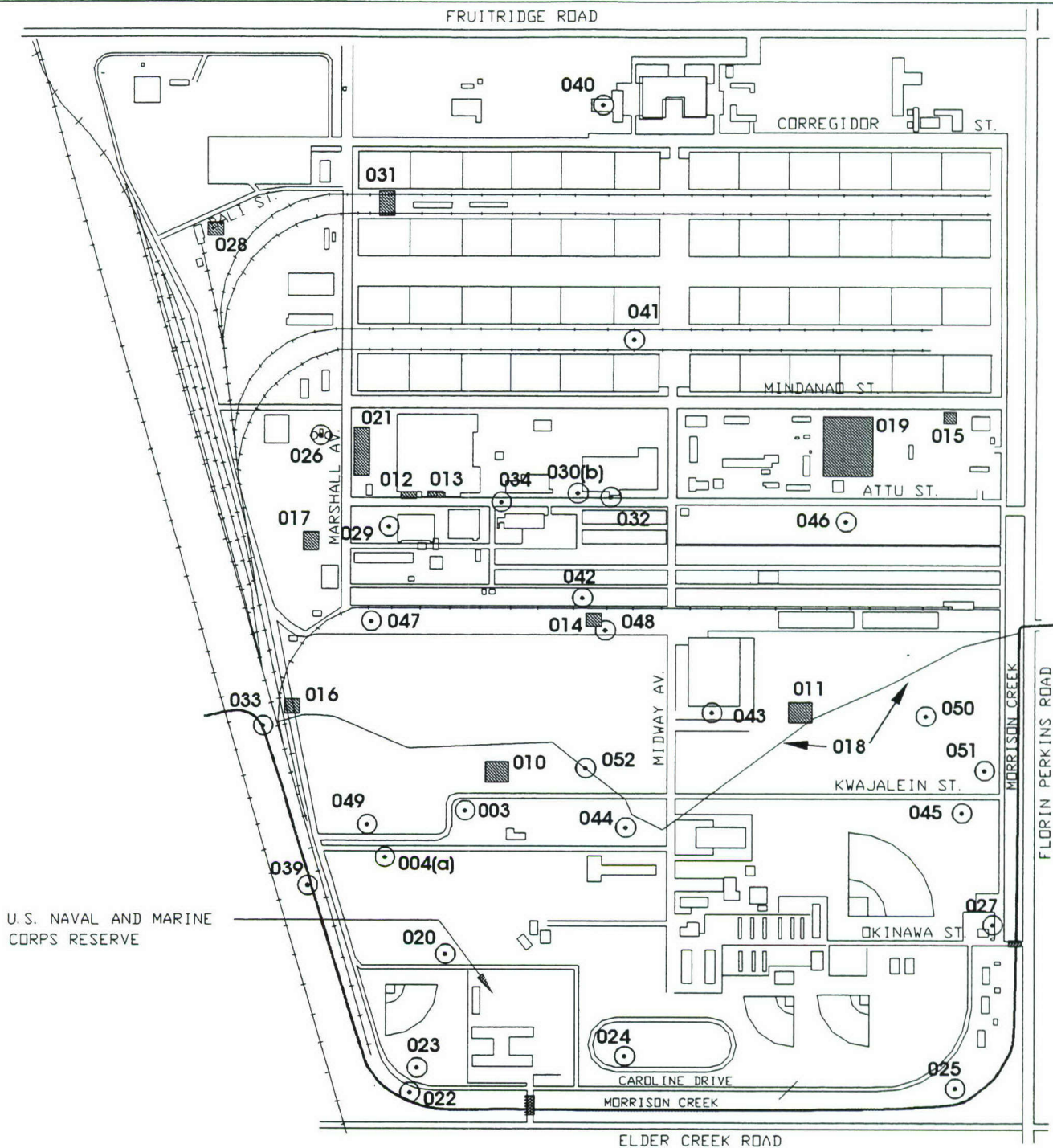
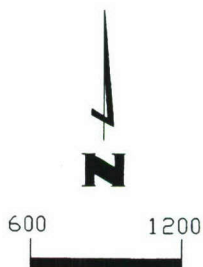


FIGURE 3-3

NFA SITES

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

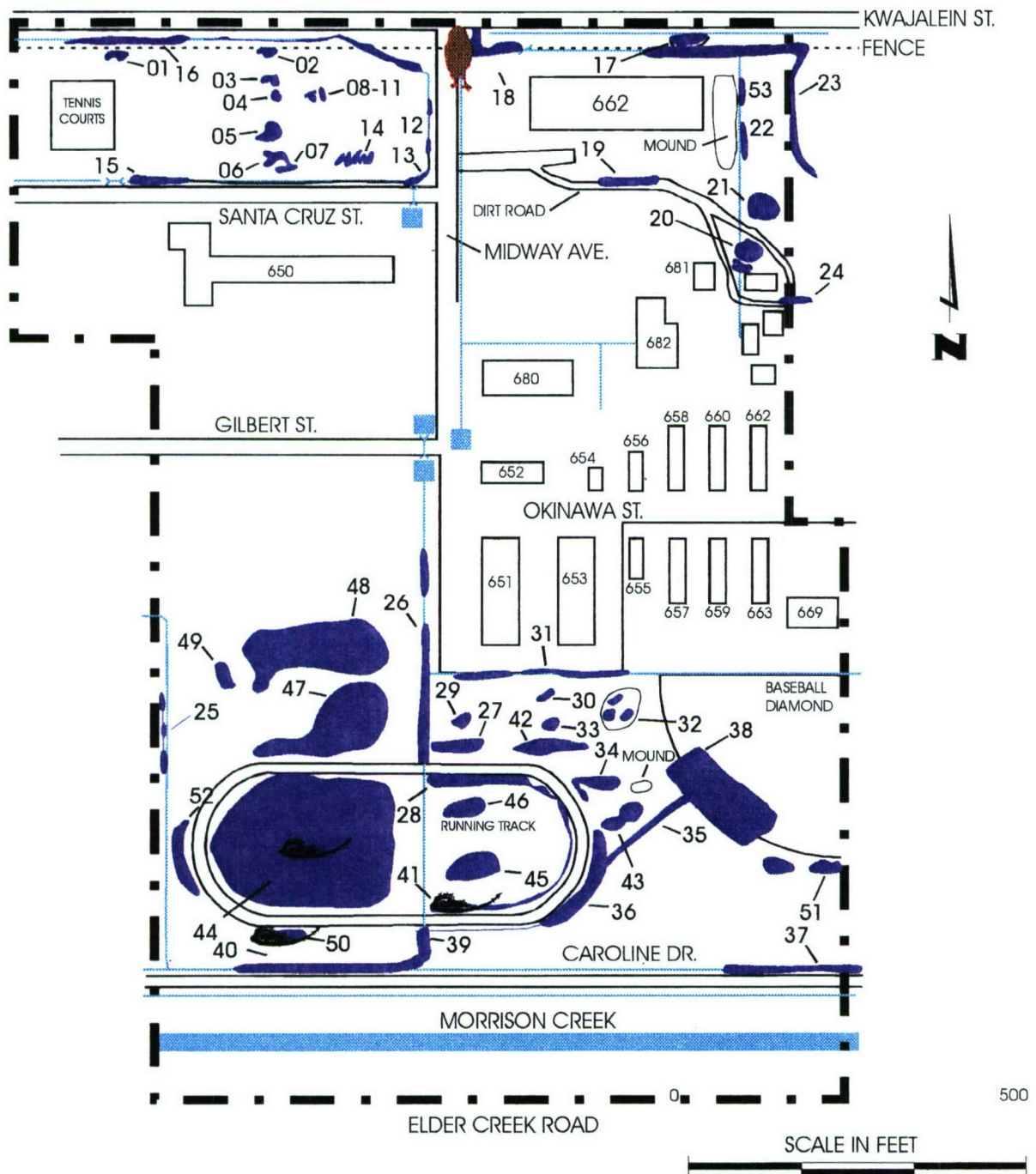
- 040 (circle with dot) GROUP C SITE LOCATIONS/NUMBER
- (shaded square) NFA SITE



FIGURE 3-4A

**LOCATIONS OF VERNAL POOL
FAIRY SHRIMP AND ACTIVE
BURROWING OWL NESTS**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**



LEGEND

- | | | | |
|--|--|--|--|
| | B.T. COLLINS ARMY RESERVE TRAINING CENTER BOUNDARY | | DRAINAGE DITCHES CHanneled TO MORRISON CREEK |
| | 03- PONDED WATER | | DRAIN INLET |
| | VERNAL POOL FAIRY SHRIMP | | CULVERT |
| | BURROWING OWL | | |

FIGURE 3-4B

LOCATIONS OF SEASONAL
PONDED AREAS AT THE
B.T. COLLINS RESERVE
TRAINING CENTER

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

BASED ON FAIRY SHRIMP SURVEYS 12/21/94 TO 4/21/95.

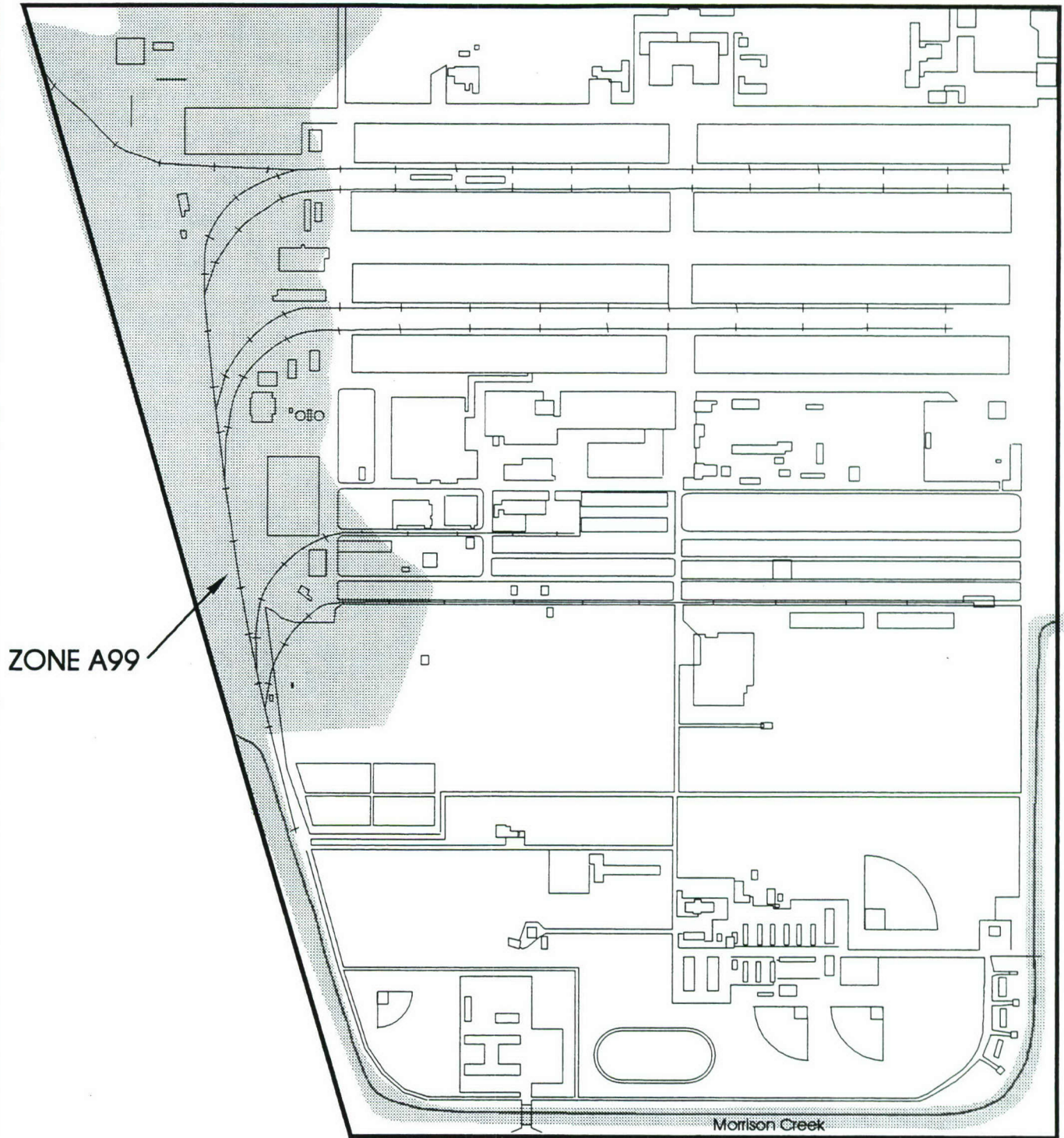
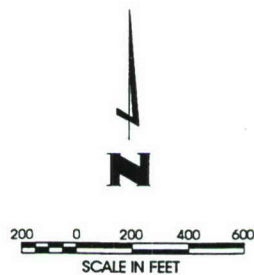


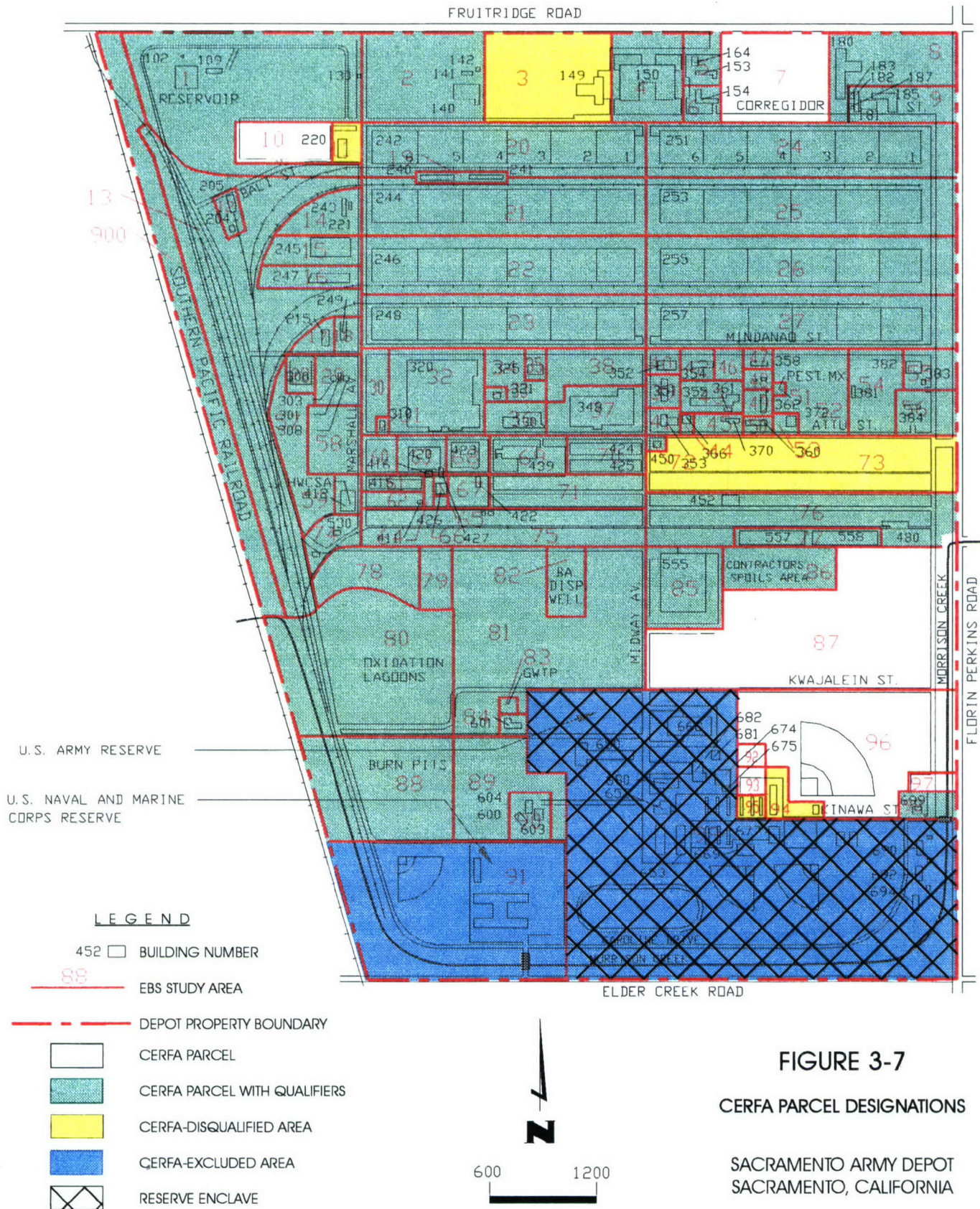
FIGURE 3-6

FLOOD MAP

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



Source: Flood Insurance Map, Federal Emergency
Management Agency (1989).



FRUITRIDGE ROAD

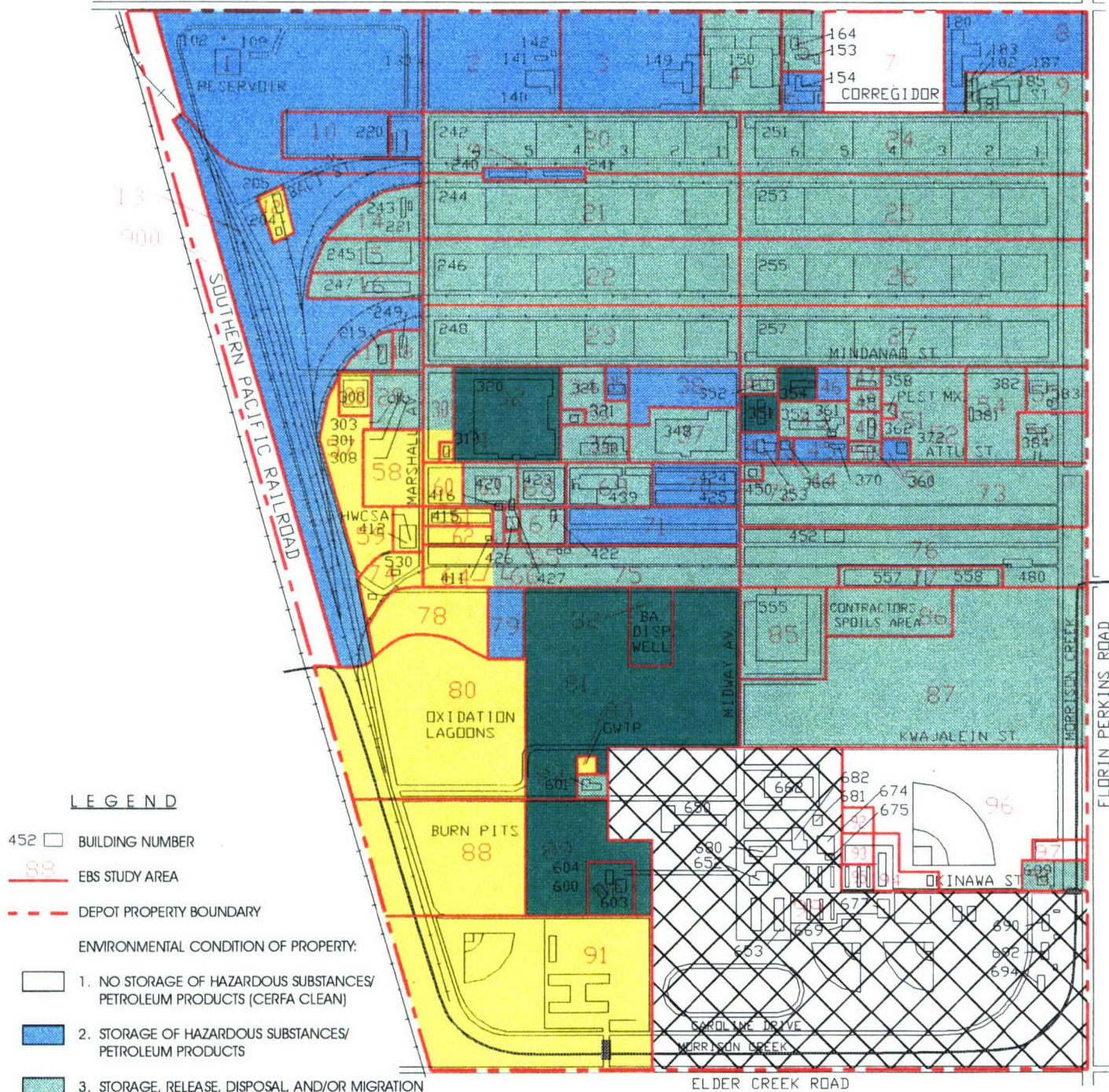
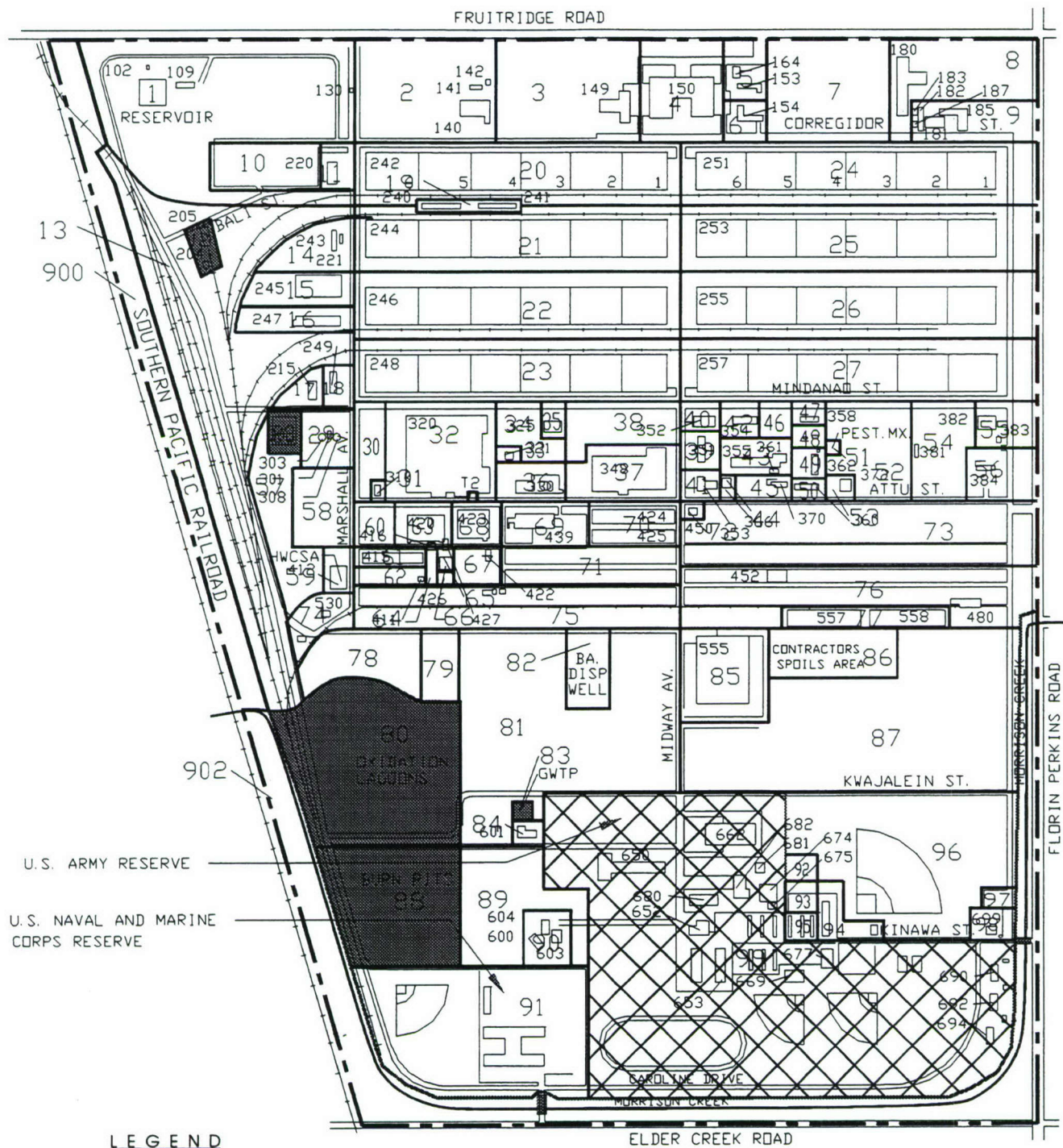


FIGURE 3-8

ENVIRONMENTAL
CONDITION OF PROPERTY

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



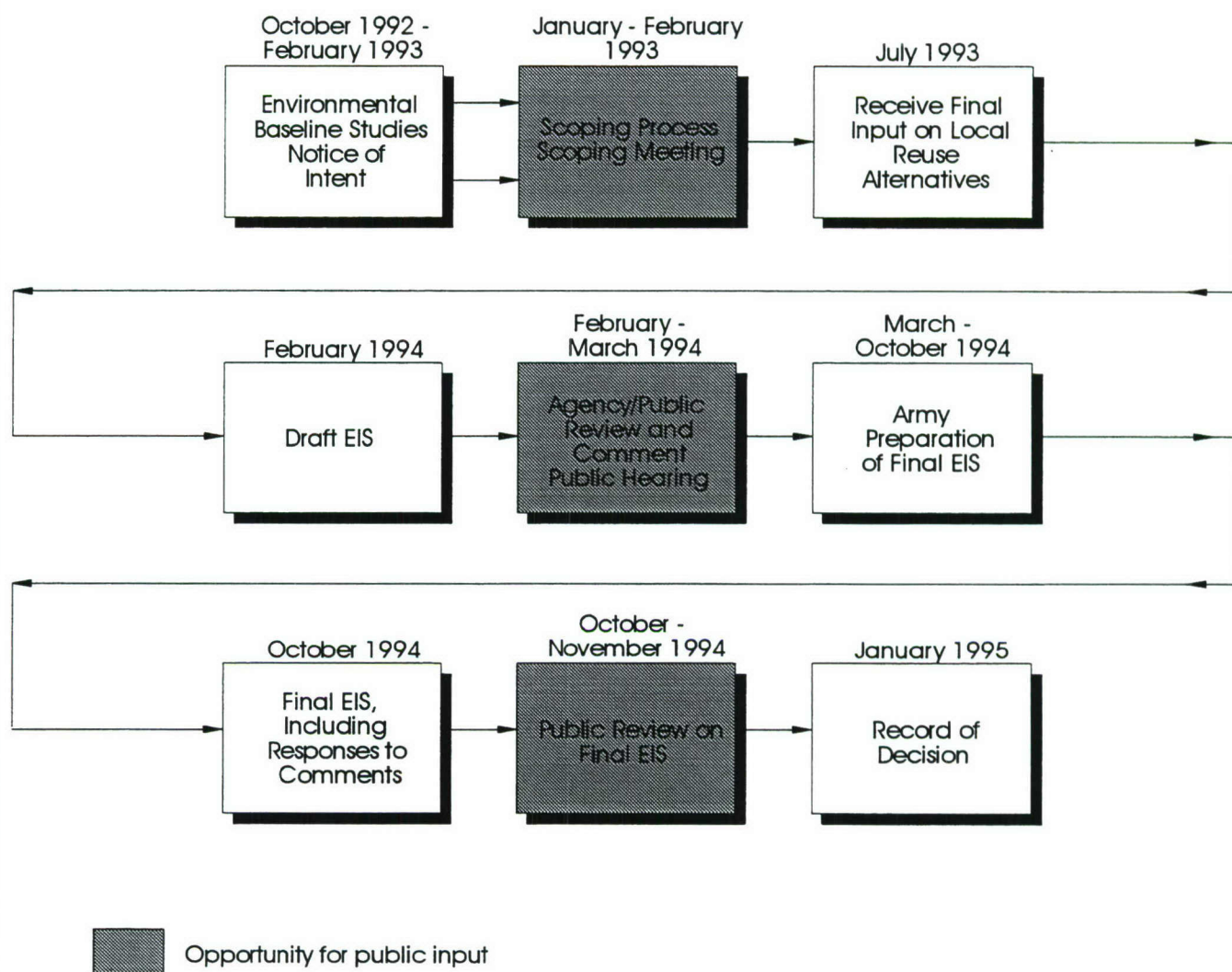


FIGURE 3-10

**ENVIRONMENTAL IMPACT STATEMENT
PUBLIC INVOLVEMENT PROCESS**

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

Chapter 4

Installation-wide Strategy For Environmental Restoration

This chapter describes and summarizes the installation-wide environmental restoration and compliance strategy for SADA. The base was closed and the property was transferred to the City of Sacramento on March 3, 1995. With the closure announcement, the installation's strategy has shifted from supporting an active Army mission to responding to disposal and reuse considerations.

The strategy for determining the most effective response mechanism for contaminant sources and contaminated areas during the early stages of the remediation process at the base was performed by the TRC. Since the Depot became part of BRAC 91, the BCT has developed a comprehensive strategy to identify the appropriate regulatory programs applicable to the areas of contamination discovered during the restoration program.

4.1

Zone/Operable Unit Designation and Strategy

4.1.1

Zone Designations

In response to Army base closure environmental restoration goals and the NPL listing, the entire 487 acres of the Depot have been considered as a single zone, consistent with the 1988 Federal Facility Agreement. All IRP sites have been grouped into one of three categories based on the priority given to investigation and remediation of each site: OUFS sites, RI/FS sites, or no further action (NFA) sites. Conceptual models of sources, contaminants, migration, and receptors were developed on a sitewide basis. Table 4-1 shows the relationship between the IRP sites, OUs and the EBS Study Areas. Refer to Table 3-4 for site descriptions.

4.1.2

OU Designations

Operable Units are defined as discrete response actions or steps toward comprehensive environmental restoration. At the Depot, OU RODs were signed for four sites and have been or are being remediated as OUs:

- OU for on-site groundwater remediation of VOCs by pump and treatment
- OU for in situ soil ventilation of VOC-contaminated soil at Tank 2 (completed)
- OU for washing of soil contaminated with metals at the Oxidation Lagoons (remedy amended to soil stabilization in the Basewide ROD)
- OU for venting volatile organic contamination in soil at the South Post Burn Pits and stabilization of soil contaminated with metals, PCBs, and dioxins/furans

The Depot has also selected and is implementing final response actions, as needed, for the remainder of IRP sites at Depot. Appropriate remedial response actions for these sites are addressed in the Basewide RI/FS, and have been agreed to in the Basewide ROD signed in January 1995. All sites are either completed or have remedial action underway. Table 4-2 shows the cleanup sequence planned. "No Further Action" sites are not listed.

4.1.3

Sequence of OUs

The comprehensive OU strategy developed by the TRC has been implemented by SADA's BCT. This strategy defined a logical sequence of OUs addressing all past releases associated with these sites. In addition to remediating OUs, the environmental response strategy:

- Incorporated the currently operating groundwater extraction and treatment system into the detailed evaluation of remedial alternatives in the Sitewide Feasibility Study for on-site/ off-site groundwater remediation. The treatment system has been performing effectively for on-site groundwater cleanup, and has been selected as a component of the final remedy for off-site groundwater cleanup.
- Streamlined the document review process by preparing the draft ROD immediately following submittal of the draft OUFS so that the two documents were undergoing review simultaneously (i.e., double-tracking).
- Initiated remedial design (RD) during the Proposed Action Plan and ROD review process so that final designs could be in place as soon as possible after the ROD was signed. This applied to sites where the proposed RA had general approval from regulators.

The information for OUFS activities in source areas is summarized below.

- **Groundwater**

RI Reports	1988
OUFS Report	May 1989
Proposed Plan	June 1989
ROD	September 1989

- **Tank 2**

RI Report	October 1991
OUFS Report	August 1991
Proposed Plan	August 1991
ROD	December 1991

- **Oxidation Lagoons**

RI Report	June 1992
OUFS Report	March 1992
Proposed Plan	August 1992
ROD	September 1992

- **South Post Burn Pits**

RI Report	October 1991
OUFS Report	May 1992 (Final) March 1993 (Revised)
Proposed Plan	June 1992
ROD	March 1993

- **Basewide**

RI Report (Revised)	September 1994
FS Report	July 1994
Proposed Plan	November 1994
ROD	January 1995

Graphical presentation of this information is presented in Figure 5.1, Projected Master Restoration Schedule.

4.1.4

Early Actions Strategy

No additional removal actions or treatability studies are currently planned for sites under the IRP program. The groundwater treatment plant will be maintained and upgraded as data warrants. Remediation has been completed at Tank 2, the Pesticide Mix Area, the Freon 113 area, the Battery Disposal Well (except for investigation-derived waste). The Locomotive Repair Facility is nearing completion. Feasibility pilot studies have been completed at Parking Lot 3 and groundwater remediation is underway.

4.1.5

Remedy Selection Approach

Remedies have been selected in accordance with statutory and NCP criteria. The SADA Project Team has involved all parties who have an impact on the remedies selected at the base in the remedy selection process. Particular attention has been given to the following during the evaluation of alternatives:

- **Applicable or Relevant and Appropriate Requirements (ARARs)**—Applicable or relevant and appropriate requirements (see Glossary—Appendix I—for definition) for anticipated remedial actions were identified through the Project Team. The effectiveness of alternatives in reducing concentrations of contaminants to chemical-specific ARARs was evaluated.
- **Land Use/Risk Assessment**—Risk assessment protocols incorporated future land use in exposure scenarios.
- **CAMU Regulation**—A CAMU was established at the South Post Burn Pits in the Basewide ROD.
- **Future Land Use**—Cleanup goals will be factored into future land use and/or deed restrictions.

The Depot's BEC held Project Team meetings to discuss conceptual remedies throughout the FS process to ensure appropriate types of remedies for each site. In addition, technical data supporting the proposed remedies were provided to the project team members for review as soon as the information was available. Technical meetings were then held to identify agency concerns, develop practical solutions to problems, and expedite remedy selection. This procedure made early decision-making possible and accelerated the entire cleanup process.

4.2

Compliance Strategy

4.2.1

Storage Tanks

No USTs remain in service at the Depot. All known USTs have been removed and soils verified clean. A geophysical survey is being conducted of the site where UST No. 300-17 is believed to have been located. If this UST exists, it will be removed. All UST removals are coordinated and regulated by the county of Sacramento. No expedited actions have been identified as shown in Tables 4-3 and 4-4.

4.2.2

Hazardous Materials/Waste Management

The Depot contains one RCRA-permitted facility—Building 412, HWCSA. Building 412 is being closed pursuant to a Cal/EPA-approved closure plan. Closure should be completed by December 1995. The Depot also contains one facility (Building 411) that was used to remove battery acid prior to shipment of batteries. In 1994, this building was closed as a RCRA facility under the supervision of Cal/EPA.

4.2.3

Solid Waste Management

The Depot has used Caltech to collect solid wastes. The Depot will continue using outside vendors to collect and dispose of solid wastes until the installation is closed. No solid waste landfills exist on the installation.

4.2.4

Polychlorinated Biphenyls

Not applicable. All PCB-containing transformers have been removed from the installation.

4.2.5

Asbestos

All known friable asbestos and asbestos-containing building materials (ACBM) that pose a public health threat have been removed from the Depot per the initial and enhanced surveys. Non-friable asbestos will be transferred with the buildings/facilities. Potential owners are notified of the presence of ACBMs within a building/facility prior to transfer.

4.2.6

Radon

Not applicable. A radon survey has been completed at the Depot. Radon survey levels were well below acceptable exposure limits.

4.2.7

RCRA Facilities (SWMUs)

Not applicable. RCRA SWMUs are being handled under the IRP program. See Sections 3.1 and 4.1.

4.2.8

NPDES Permits

The NPDES permit was closed out in April 1995. A new NPDES permit is being prepared for the South Post Groundwater Treatment Plant (SPGWTP) to allow for release of treated groundwater into Morrison Creek.

4.2.9

Oil/Water Separators

All oil/water separators were inspected as part of the EBS studies. No oil/water separator required major cleanup.

4.2.10

NRC Licensing

The strategy for Building 300 is to facilitate deactivation of the NRC license held by TMDE. Decommissioning of the NRC License for Building 300 (BML 04-04279-01) was handled separately by the TMDE Laboratory (USACHPPM 1995). Results of this Decommissioning Report have not yet been received. The strategy for the NRC license for the mission in Building 555, which has been transferred to the U.S. Air Force, is to terminate the Army's license, and transfer the mission to McClellan Air Force Base, to be performed under a modification of the Air Force license. The NRC license for Building 555 has been terminated.

4.2.11

Pollution Prevention

The Army will continue to facilitate compliance with regulations that apply long term O&M or property transfer at the Depot until disposal. However, the source reduction program is no longer applicable as all manufacturing and maintenance operations have ceased.

4.2.12

Mixed Waste

Excavation of the Building 300 Old Burn Pits is scheduled for fiscal year 1995. Site data collected to date does not indicate high levels of radioactivity. However, radiation monitoring will be conducted during the excavation. Monitoring is being coordinated with the radiological health branch of the California Department of Health Services.

4.2.13

Radiation

Depot area/building surveys for the presence of radiation were conducted by the U.S. Army Center for Health Promotion and Preventative Medicine (provisional) in accordance with NRC and California state regulations and guidelines. Surveys were conducted in the buildings with sources and random surveys of warehouse space were conducted to ensure all areas were clean. The results of these studies indicate that radiation is at or below background levels and therefore, does not pose a threat to human health or the environment (USACHPPM 1995).

4.2.14

Lead-Based Paint

Studies have been performed to determine whether buildings at the Depot contain lead-based paint. Based on the results of the study, the Depot has complied with all current Army policies regarding lead-based paint.

4.3

Natural and Cultural Resources Compliance Strategies

4.3.1

Vegetation

Annual grassland vegetation remains in the areas that have been and are being transferred to the City of Sacramento. Some of this area has been designated as Open Space by the City. The recommendation in the FOST for transfers to the City is that the Open Space area be maintained as wildlife habitat, which would also maintain the vegetation in this area. The Army will maintain the vegetation in the open space area not yet transferred.

4.3.2

Wildlife

The habitat for burrowing owls could be lost by construction of offices, warehouses, parking structures, or roads, depending on how close new construction comes to the existing railroad tracks. If development impacts nesting areas, consultation with the CDFG would be required. The FOSTs and deeds for transfers of parcels with burrowing owl habitat state this requirement.

4.3.3

Wetlands and Floodplains

The area outside the fenced perimeter but within the northwest boundary of the Depot site contains the only known wetlands on the Depot. This area has been transferred to the City of Sacramento. Conversion would require a wetland delineation, acquisition of appropriate permits to fill wetlands, and a permit to take a threatened species. The limit for nationwide permits to fill wetlands under ACOE guidelines is one acre, and it is likely this area contains more than one acre, and therefore would not be eligible for a nationwide permit. However, the City has designated the area as Open Space. There would be no changes to the present Morrison Creek channel. The strategy was to recommend in the FOST that the area designated as Open Space be maintained as wildlife habitat, in part to protect the wetlands.

Regarding floodplains, reuse could result in a slight increase in flood hazard because of increased runoff associated with more paved surfaces. City-approved grading plans would include the design of drainage facilities to accommodate increased runoff. However, in the case of severe floods where Morrison Creek is at capacity, the increased runoff would not be accommodated and

would add to flood hazards. An encroachment permit from Sacramento County may also be required. The strategy was to recommend in the FOST implementation of the EIS mitigation measures, which address stormwater.

4.3.4

Designated Preservation Areas

An area that includes the threatened vernal pool fairy shrimp and wetlands has been designated as Open Space areas by the City of Sacramento, and has been transferred to the City of Sacramento. This area also includes burrowing owl nesting sites. It is recommended in the FOST for the City of Sacramento that the Open Space area be maintained as wildlife habitat.

4.3.5

Rare, Threatened and Endangered Species

Localities of the threatened *Branchinecta lynchi* (i.e., vernal pool fairy shrimp) could be lost to reuse. Actions likely to jeopardize the continued existence of, or result in the destruction or adverse modification of, a critical habitat are subject to a requirement to confer with the FWS. Parcels with *Branchinecta lynchi* have been transferred to the City of Sacramento. The FOST for that transfer recommended a conservation easement for Pool 413 and that Open Space be maintained as wildlife habitat to provide protection for *Branchinecta lynchi*.

4.3.6

Cultural Resources

No cultural or archaeological resources have been discovered at the Depot through previous studies. The State Historic Preservation Officer (SHPO) sent a letter confirming that no preservation sites are located at the Depot (Appendix C).

New construction could disclose undiscovered buried archaeological resources, but it is highly unlikely due to the lack of previous discoveries. If buried cultural resources are encountered during construction, all activity would stop until an archaeologist can evaluate the resource. If the archaeologist determines that the find is potentially significant and requires further evaluation, the SHPO would be notified and the archaeologist, in consultation with the SHPO, would prepare a plan for evaluating the find. If paleontological resources are encountered, consultation with a paleontologist would be necessary.

The FOSTs advise new owners of this possibility and require compliance.

4.3.7

Other Resources

No other natural resources on the Depot site besides those addressed above, have restoration or compliance programs.

4.4

Community Involvement/Strategy

A Community Relations Plan (CRP), dated May 1992, has been implemented to facilitate communication amongst the Depot, ACOE, USEPA, Cal/EPA, RWQCB, community representatives, and other members from various federal, state, and local elected officials concerning IRP activities at the Depot. This communication ensures that the community is informed of environmental cleanup activities and results, provides an avenue for exchange of information regarding the environmental cleanup, and provides pro-active communication to involve the community in the decision-making process of the IRP.

The BCT has adopted the following strategy to support a pro-active community relations program in accordance with CERCLA requirements:

- Update the existing CRP whenever significant changes occur during the cleanup efforts.
- Develop proposed plans and related fact sheets. Issue public notice in the local newspaper two weeks in advance of public comment periods on these plans.
- Hold 30-day public comment periods on proposed plans, and respond to all comments in a responsiveness summary. All proposed plans and responsiveness summaries are made available to the public through the information repositories.
- Hold informal and formal public meetings as required during the response process. Public meetings are also available at the public's request at any time during the process.
- Provide an opportunity for public comment on removal actions.
- Maintain an information repository at the U.S. Corps of Engineers and in the community.
- Publish fact sheets on the progress of environmental restoration and disposal programs.
- Maintain the existing open access and format of the Depot's RAB.
- Provide public tours of the Depot remediation sites.
- Continue to send information to local newspapers on the Depot's disposal and cleanup efforts.

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Table 4-1. Relationship Between IRP SWMU Sites, OUs, and EBS Study Areas

IRP SWMU Site Numbers	OUs	EBS Study Area Numbers
040		3
028		12
031		20
041		22
007		28
026		29
005, 012, 013, 021, 034	Tank 2	32
030, 032		37
054		38
008		51
019		52
015		55
Parking Lot 3		58
017		59
Freon 113 Area, 029, 034		63
Freon 113 Area, 034		68
033,039		76
039		78
046		79
001, 004, 014, 016, 018, 039, 049	Oxidation Lagoons	80
003, 010, 018, 039, 042, 047, 048, 052		81
006, 009		82
Contractor's Spoils Area		86
011, 018, 039, 043, 050, 051		87
002, 004, 020	South Post Burn Pits	88
022, 023		91
024, 025, 044		96
045		98
027		99

NOTE: See Figure 2-7 for further site cross references.

Table 4-2. Expedited Cleanup Sequence

EBS Study Area	Site	Environmental Risk*	Reuse Priority	Cleanup Sequence	Reconcile Comments
32	Tank 2	5×10^{-04} HI = 18	High	1	Remediation complete.
80	Oxidation Lagoons	2×10^{-04} HI = 10	Low	6	To be remediated with South Post Burn Pits, to be completed in 1996.
88	South Post Burn Pits	2×10^{-04} HI = 9.5	Low	6	Remediation in progress, to be completed in 1996.
28	Building 300 Old Burn Pits	9×10^{-05} HI = 4.2	Medium	5	To be remediated with South Post Burn Pits, to be completed in 1996.
58	Parking Lot 3	NC	Medium	3	Soil remediation was completed at close of pilot test in March 1995.
63 68	Freon 113	5×10^{-05} HI < 1	High	2	Soil remediation was completed in 1994.
12	Locomotive Repair Facility	NC	Medium	4	Bioremediation completed in April 1995.
88 89 91	Groundwater	2×10^{-04}	Low	7	Remediation ongoing since 1989. Final completion date not determined, but estimated to be 2001.

* Baseline risk, assuming no action was taken at the site.
 HI = Hazard Index, a measurement of non-cancer risk.
 NC = Not calculated.

Table 4-3. Environmental Restoration Planned Expedited Actions

EBS Study Area	UST No.	Action	Objective	Time Frame
There are no environmental restoration planned expedited actions.				

Table 4-4. Environmental Compliance Planned Expedited Actions

EBS Study Area	UST No.	Action	Objective	Time Frame
There are no environmental compliance planned expedited actions.				

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Chapter 5

Environmental Master Schedules

The Environmental Programs master schedule activities and fiscal year requirements have been summarized from detailed network and operational schedules developed to support the Depot FFA and compliance needs. IRP activities are represented in Figures 5-1 and 5-2, compliance activities in Figure 5-3, and Natural and Cultural Resources activities are described in Section 5.3. BCP/RAB, compliance, and reuse-related meeting schedules are summarized in Section 5.4.

5.1

Environmental Restoration Program

The Depot has been using an expedited schedule according to the President's Five-Part Plan (Fast Track Cleanup) with excellent support from DESCOM (IOC), AMC, and Department of the Army. Further support from ACOE and AEC has made it possible for the Depot to expedite the cleanup process two years ahead of FFA-agreed timelines.

5.1.1

Federal Facility Agreement Timelines

The Depot was one of the first federal facilities to sign a FFA with the regulatory agencies. The entire 487 acres of the Depot is listed as one NPL site. To resolve the difficulties of handling all contaminated areas in one ROD for cleanup, four OU RODs were developed and signed: Groundwater, Tank 2, Oxidation Lagoons, and South Post Burn Pits. All existing OU RODs, No Further Action sites, EBS findings, and any sites investigated or reviewed through subsequent investigations or discovered prior to the sitewide ROD public meeting were included in the Basewide ROD. This ROD was signed in January 1995.

It is anticipated that the Depot can meet the fast track schedule milestone as shown in Figure 5-1. Funding requirements have been obtained and the regulatory agencies are supportive and enthusiastic about final completion. All document review time periods are spelled out within the FFA and have been met by all parties (Table 5-1).

5.1.2

Requirements by Fiscal Year

The detailed fiscal requirements for the Depot are contained in the Army BRAC 1383 program, which is summarized in Appendix A.

Over the years, the Depot has been able to acquire all necessary funding to expedite the environmental programs. **This full funding is accountable to the Depot's pro-active approach to cleanup along with the dedicated support of Army chain-of-command. Furthermore, the Depot has been able to capture end-of-year funds by its ability to obligate funds and**

execute cleanup projects. The ACOE has played a valuable role in making this happen. The Depot is confident that current and future funding requirements will be met.

5.2

Compliance Programs

The Depot's mission ceased in December 1993; therefore, there is no longer any mission or operation related compliance activities. All remaining compliance activities relate to monitoring existing closure operations. All tenant activities were monitored by the Depot's Environmental Management Division for adherence to regulatory requirements.

The BRAC closure compliance and non-IRP cleanups included:

- RCRA-permitted facility closures (Buildings 411 and 412)
- UST program (all tanks have been removed)
- EBSs and related cleanups (non-RCRA, non-IRP)
- Maintenance of permits for future use or disposal (air, stormwater, sewer, etc.)
- Hazardous material and waste capabilities including emergency response
- Asbestos and lead-based paint programs
- Radiation survey of buildings

5.2.1

Master Compliance Schedules

The compliance schedule for the Depot is provided in Figures 5-3 and 5-4. A comprehensive planning schedule and a flow chart are also presented in Figures 5-5 and 5-6. One RCRA facility has been closed and the other is in the final closure certification process. The UST program is in the final verification approval stage with the county and all USTs have been removed. Non-RCRA decontamination of property and buildings as indicated by EBS findings is being finalized, and 85 percent of the Depot property has been already transferred. All asbestos and lead-based paint actions have been completed. The radiation survey of buildings has been completed and the NRC license closeout is complete. All work has been accomplished within the BRAC closure timeframe.

5.2.2

Requirements by Fiscal Year

The detailed fiscal requirements for the Depot are contained in the Army BRAC 1383 program and are summarized in Appendix A. Over the years, the Depot has been able to acquire all necessary funding to maintain a pro-active environmental compliance program. Funding for some

items were from the DBOF account or combinations of DBOF and BRAC. The Depot is confident that current and future funding requirements will be met.

5.3

Natural and Cultural Resources

All major surveys and agency consultations are complete for special-status species, sensitive habitats, and cultural resources. Potential reuse effects on each of these resources were evaluated in the EIS. The EIS ROD was signed in January 1995. There were no floodplains or prime farmlands affected by disposal. The presence of biological resources and the potential presence of cultural resources have and will be mentioned in the transfer deeds for parcels with such resources.

5.3.1

Natural and Cultural Resources Schedule

The Natural and Cultural Resources schedule has been completed. It related only to vernal pool fairy shrimp monitoring and delineation of potential wetlands (Figure 5-7). The one threatened species of vernal pool fairy shrimp (*Branchinecta lynchi*) identified at the Depot has been protected by a conservation easement.

There are wetlands in the northwest corner of the Depot. This area was delineated in the spring of 1994. It is outside of the Depot's fenced boundary and is of no significant economic use. The area has been zoned as Open Space to protect the habitat.

All actions regarding natural and cultural resources have been concluded.

5.3.2

Requirements by Fiscal Year

The detailed fiscal requirements for the Depot are contained in Appendix A. Remaining funding requirements for this section are minor or complete.

5.4

Meeting Schedule

During the closure process the Depot held several regular meetings to coordinate and expedite the environmental cleanup, reuse, and disposal. Meetings were typically held as follows:

- BCT/RAB meetings were held monthly at various locations to review, plan, and discuss cleanups and environmental requirements. Table 5-2 gives a brief outline of topics.

These meetings provided a forum for both regulator and public input on the Depot's cleanup program. The regulators participated directly in the formulation of cleanup strategies, and helped to present those strategies at the public RAB meetings, generally

held in the surrounding community. RAB members offered suggestions on both the strategies themselves and on ways of presenting program status and results to the public.

- Environmental coordination meetings were held monthly at the Depot to coordinate and assist in BRAC, property, and reuse issues.

While these meetings initially focussed on environmental issues, they grew into discussions of all topics related to closure and reuse, to ensure that actions were coordinated at the worker level. These meetings were attended by Depot base closure, facilities and environmental staff, tenants, Corps of Engineers District, and support contractors. Topics included closure timelines, tenant moves, projected loss of support capabilities, building closures, utilities status, reuse interests, and environmental cleanup.

- Infrastructure meetings were held monthly at the Depot to coordinate and assist with utilities and other physical items required in reuse and transfer.

These meetings were attended by Depot facilities, Corps of Engineers District, City engineers, support contractors, and local utility companies. The primary focus was on planning for the phase-down of Army owned and operated utility systems and infrastructure, and ultimate transfer of the systems to private operation.

- The City of Sacramento Reuse Commission held monthly meetings at City Hall to plan and discuss the Reuse Plan for the Depot.

While these meetings were run by the City to establish its reuse plan for the closed base, Depot and Corps of Engineers personnel served as ex-officio members of the Commission and made presentations on key topics during the planning process. The City formally adopted the Army Depot Reuse Plan on November 1, 1994.

- Technical/Issue meetings were held as necessary to facilitate and expedite environmental, reuse and disposal concerns.

Table 5-1. Federal Facility Agreement Deadlines (Basewide)

Draft Primary Document	Submission Deadline	Depot Fast Track
RI/FS Work Plan; Sampling and Analysis Plan	1 March 1991*	Completed
Quality Assurance Project Plan	1 March 1991*	Completed
Remedial Investigation Report	1 October 1991*	Completed
Community Relations Plan	1 November 1991*	Completed
Initial Screening of Alternatives	30 September 1992*	Completed
Feasibility Study Report Public Health Evaluations	30 September 1994	30 March 1994
Proposed Plans	30 June 1995	December 1994
Record of Decision (Basewide)	31 March 1996	January 1995
<i>Operable Unit Submittals</i>		
South Post Groundwater OUFS	30 September 1994	May 1989
South Post Groundwater Proposed Plan	30 June 1995	June 1989
South Post Groundwater ROD	31 March 1996	September 1989
South Post Groundwater Remedial Action	Begin within 15 months after ROD signed	November 1989
Tank 2 OUFS	30 September 1994	August 1991
Tank 2 Proposed Plan	30 June 1995	August 1991
Tank 2 ROD	31 March 1996	December 1991
Tank 2 Remedial Action Started Completed	Begin within 15 months after ROD signed	July 1992 March 1993
Oxidation Lagoons OUFS	30 September 1994	March 1992
Oxidation Lagoons Proposed Plan	30 June 1995	August 1992
Oxidation Lagoons ROD	31 March 1996	September 1992
Oxidation Lagoons Remedial Action Pilot Test	Begin within 15 months after ROD signed	October 1992
Oxidation Lagoons ROD Amendment	July 1994	January 1995
South Post Burn Pits OUFS	30 September 1994	May 1992 Revised March 1993
South Post Burn Pits Proposed Plan	30 June 1995	June 1992
South Post Burn Pits ROD	31 March 1996	March 1993
South Post Burn Pits ROD Amendment	July 1994	January 1995
South Post Burn Pits Remedial Action Soil Ventilation Stabilization (CAMU)	Begin within 15 months after ROD signed	October 1993 June 1995

* Completed – All submissions were ahead of original FFA schedules.

Table 5-2. BRAC Cleanup Team Meeting Schedule

Date	Topic
January 1993	Burn Pits ROD; site investigation at Pesticide Mix Area and Battery Disposal Well; community relations activities.
March 1993	Completion of Tank 2 remediation; investigation of the extent of contamination of Freon 113; CERFA; removal of debris from Contractor Spoils Area.
April 1993	CERFA; Tank 2 confirmation sample results; Building 300 Burn Pits health risk assessment; RFP for Burn Pits solidification.
May 1993	Accelerating schedules to expedite remediation; results of investigations at Pesticide Mix Area and Battery Disposal Well; Parking Lot 3 air sparging pilot test.
July 1993	State RCRA authority and CAMU regulations as applied to Building 300; CERFA; disposal of IDW from Pesticide Mix Area investigation; groundwater monitoring during air sparging pilot test; data quality objectives.
August 1993	Freon 113 Area investigation; Burn Pits solidification, CAMUs and LDRs; pilot testing of soil washing at Oxidation Lagoons.
September 1993	Disposal of IDW from Battery Disposal Well; groundwater monitoring plan; Contractor Spoils Area investigation; status of air sparging pilot test.
October 1993	State CAMUs; background sampling for radium at Building 300; sitewide FS and risk assessment.
November 1993	Results of the field investigation of Freon 113 area; off-site groundwater monitoring; community relations activities; BRAC cleanup team; EBS/FOST
December 1993	Offsite groundwater modeling; results of Parking Lot 3 air sparging; basewide RI/FS report and schedules; ecological risk assessment.
January 1994	Basewide RI/FS; groundwater modeling; base closure plan.
February 1994	Basewide RI/FS, groundwater modeling, base closure plan, Freon 113 pilot test.
March 1994	Basewide RI/FS.
April 1994	Basewide RI/FS.
May 1994	Proposed plan, public meeting, draft Basewide ROD.
June 1994	Draft Basewide ROD.
July 1994	Parking Lot 3 remediation; off-site BAT probes; groundwater modeling.
August 1994	RAB; ARARs; investigation of cyanide and acid sumps; stabilization contract; soil gas cleanup levels.
September 1994	Basewide RI/FS; EBS reports; stabilization; horizontal wells; radiation.
October 1994	Transfer of property; basewide proposed plan; additional field investigations; FS and ARARs; EBS.
November 1994	Transfer of property; signing of Basewide ROD; RAB meeting; ARARs; additional field investigations; EBS.

Table 5-2. BRAC Cleanup Team Meeting Schedule

Date	Topic
December 1994	Basewide ROD, cleanup levels for South Post Burn Pits SVE system; rebound sampling; Parking Lot 3 pilot test; chromium levels in MW-74.
January 1995	RD/RA workplan; post-ROD actions; deletion from NPL; Government Conference on the Environment; FFA schedules, March 3 property transfer.
February 1995	RD schedules; RA schedules; O&M manual for SPGWTP; 5-year review; closeout requirements.
March 1995	RD/RA workplan; Building 300 radiation sampling; groundwater pump and treat design; UST excavations; cyanide leach field sampling; Army awards.
April 1995	USTs; BCP; RI/FS report comments; Burn Pits stabilization schedule; Eastman Lumber; contamination in northeast wells; Site 22.
May 1995	Burn Pits stabilization; Building 300 sump radiation; well abandonment; USTs; EPA IG data review; EBS/FOST; horizontal well installation.
June 1995	Deletion; remedial design documents for Burn Pits stabilization; EBS; groundwater concentrations and monitoring well sampling frequency; USTs.
July 1995	Offsite wells; onsite well closure; quarterly groundwater reports; rebound sampling in Freon 113 area.
August 1995	Groundwater modeling report comments; 5-year review; sewer line survey; EBS; BCP; USTs; RI/FS status.
September 1995	Tank 2 verification; horizontal well schedule; 5-year review; SVE system shutdown at Burn Pits; radiation survey; Burn Pits stabilization design documents comments.

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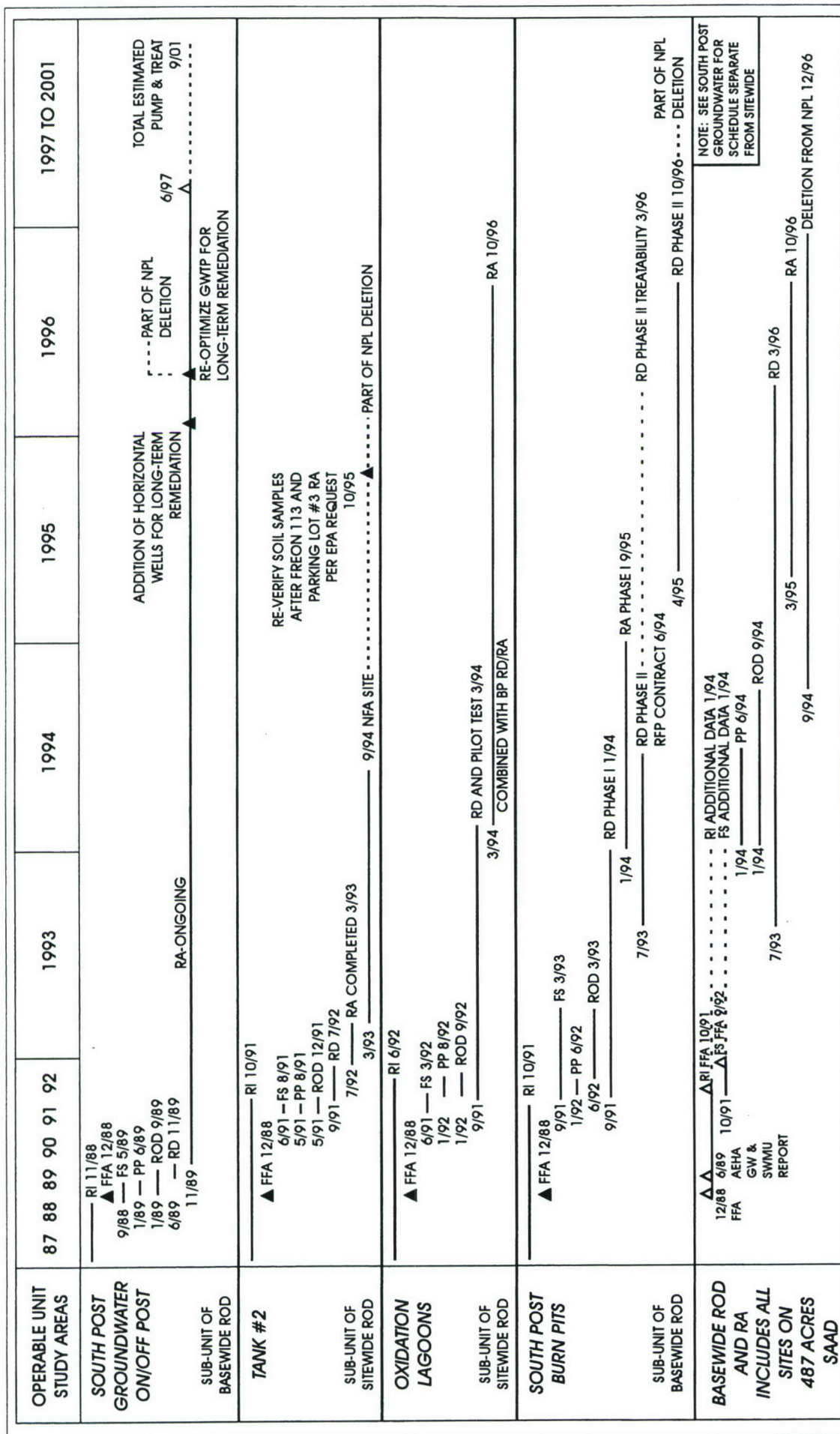


FIGURE 5-1

PROJECTED MASTER
RESTORATION SCHEDULE
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

LEGEND

EPA - ENVIRONMENTAL PROTECTION AGENCY
FFA - FEDERAL FACILITY AGREEMENT
FS - FEASIBILITY STUDY
GW - GROUNDWATER
GWTP - GROUNDWATER TREATMENT PLANT
NFA - NO FURTHER ACTION
NPL - NATIONAL PRIORITIES LIST

PP - PROPOSED PLAN
RA - REMEDIAL ACTION
RD - REMEDIAL DESIGN
RFP - REQUEST FOR PROPOSAL
RI - REMEDIAL INVESTIGATION
ROD - RECORD OF DECISION
SWMU - SOLID WASTE MANAGEMENT UNIT

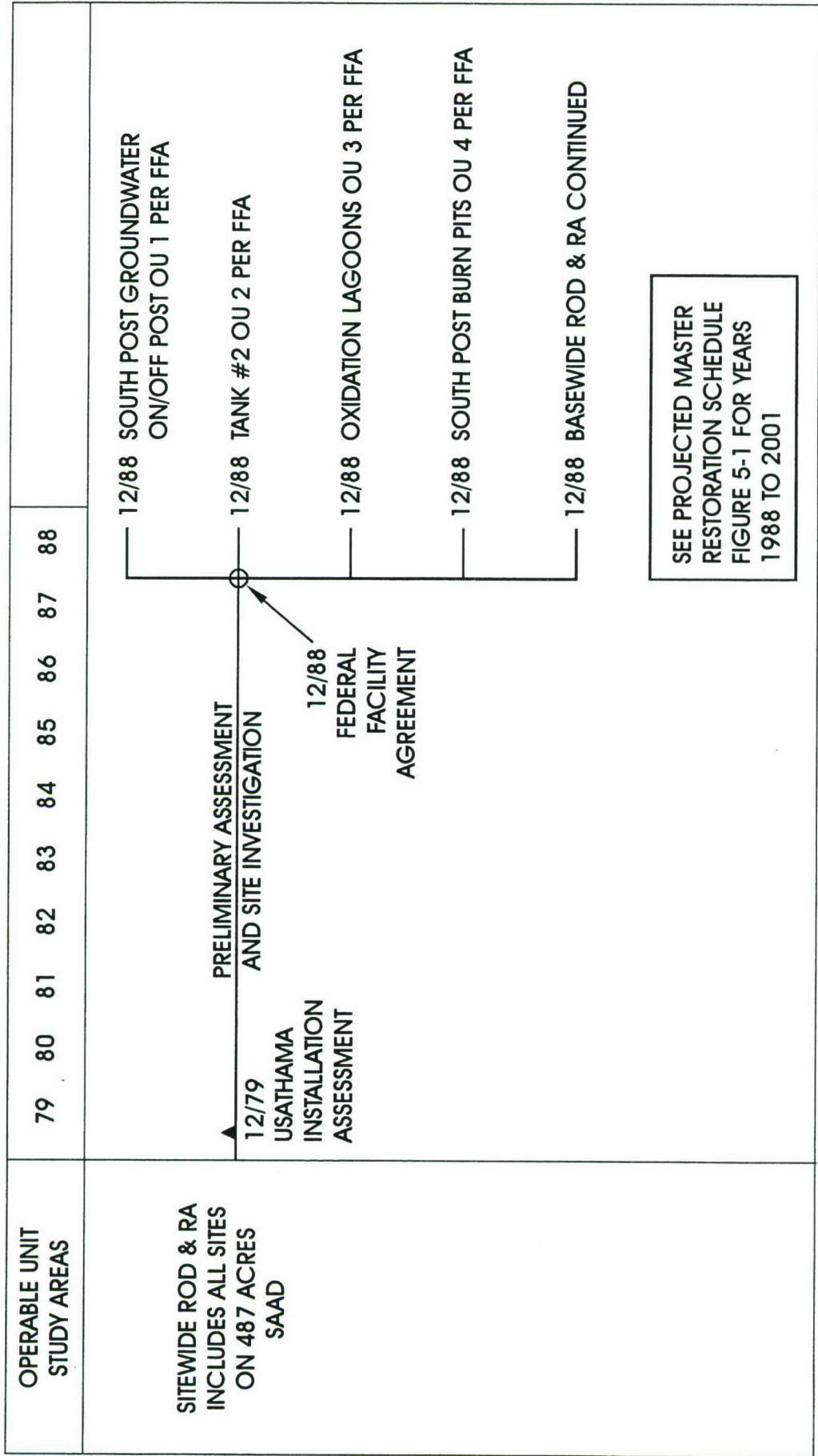


FIGURE 5-2

PAST RESTORATION SCHEDULE

SACRAMENTO ARMY DEPOT
 SACRAMENTO, CALIFORNIA

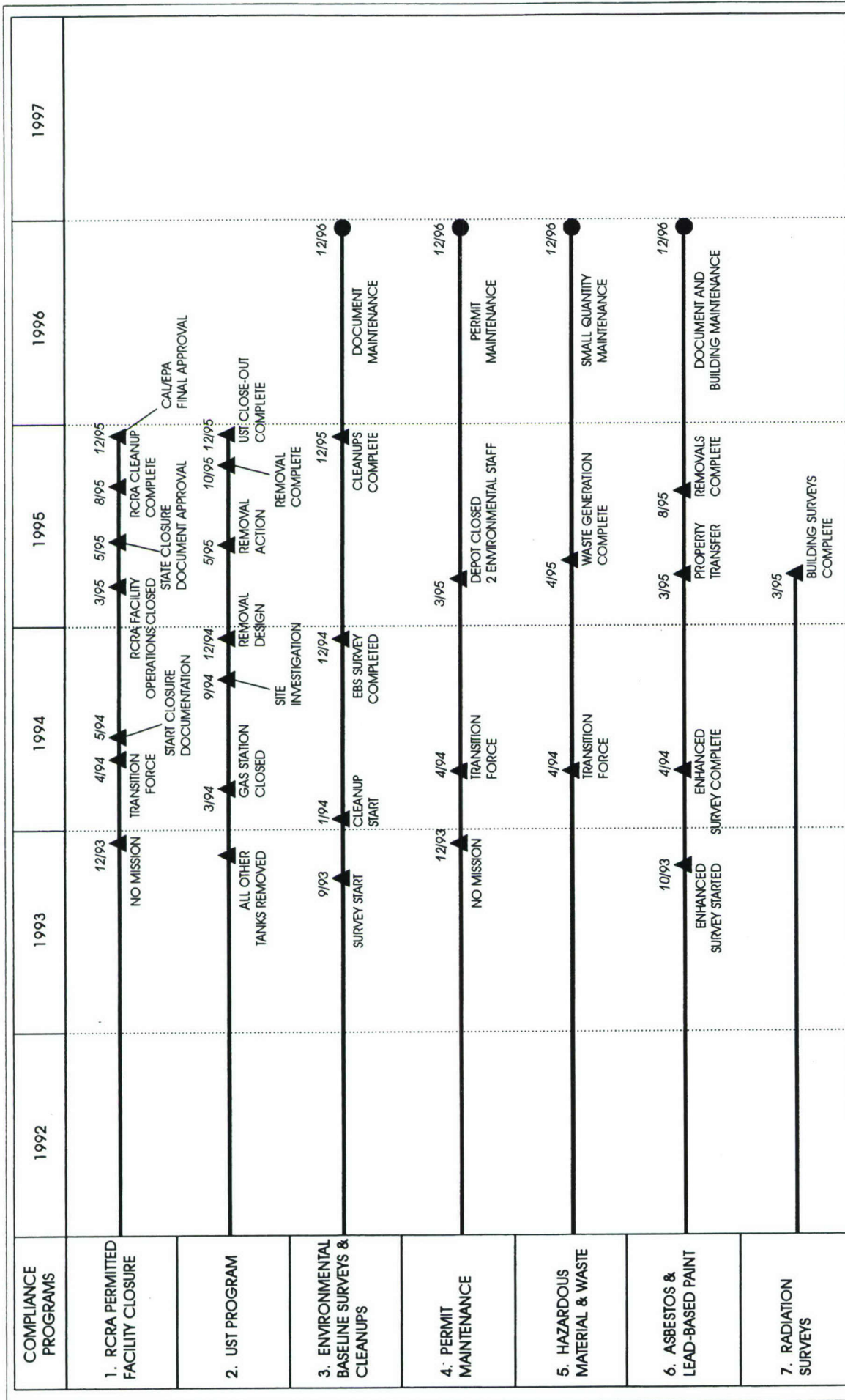


FIGURE 5-3

PROJECTED MASTER SCHEDULE FOR
CLOSURE-RELATED COMPLIANCE PROGRAMS

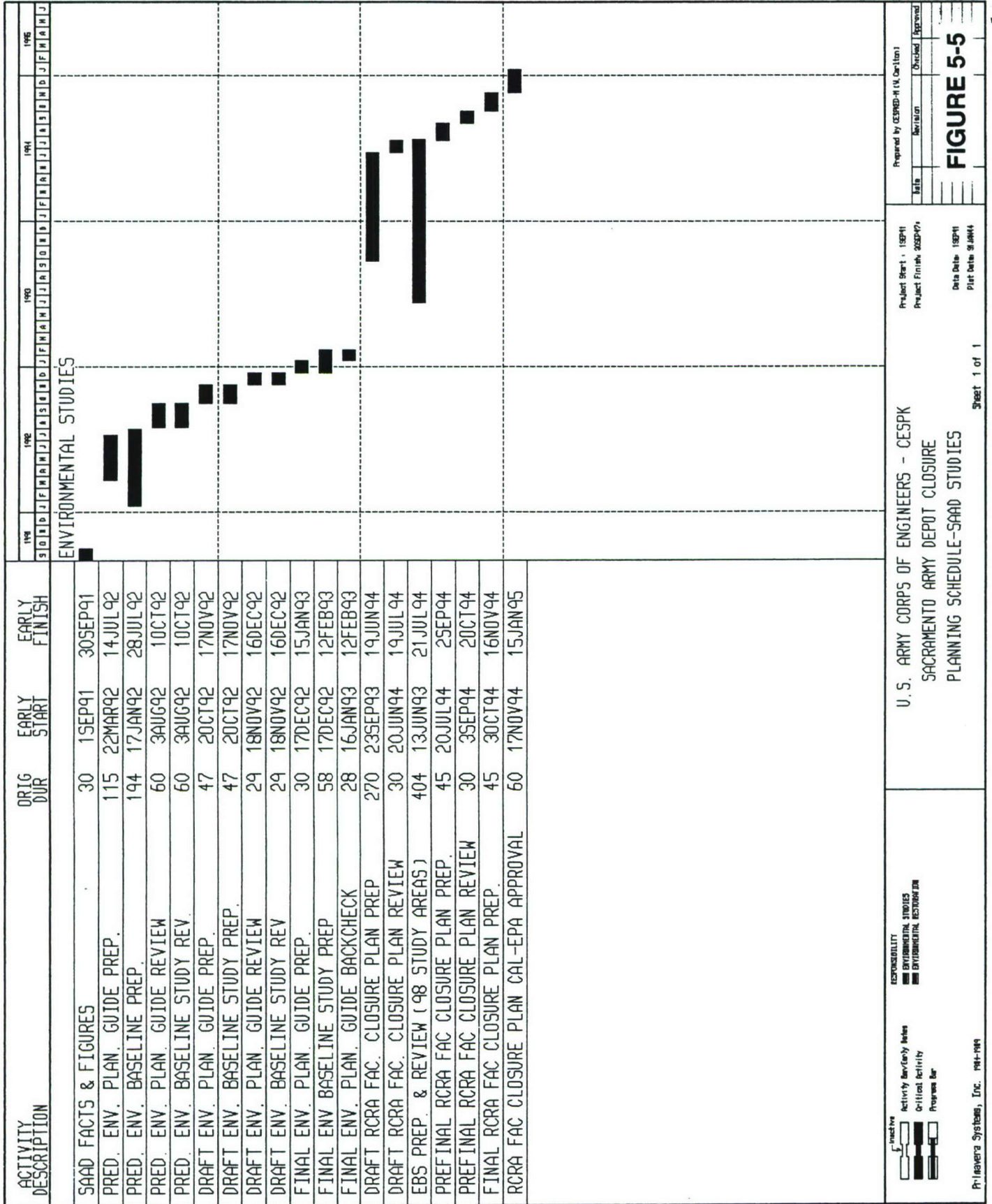
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

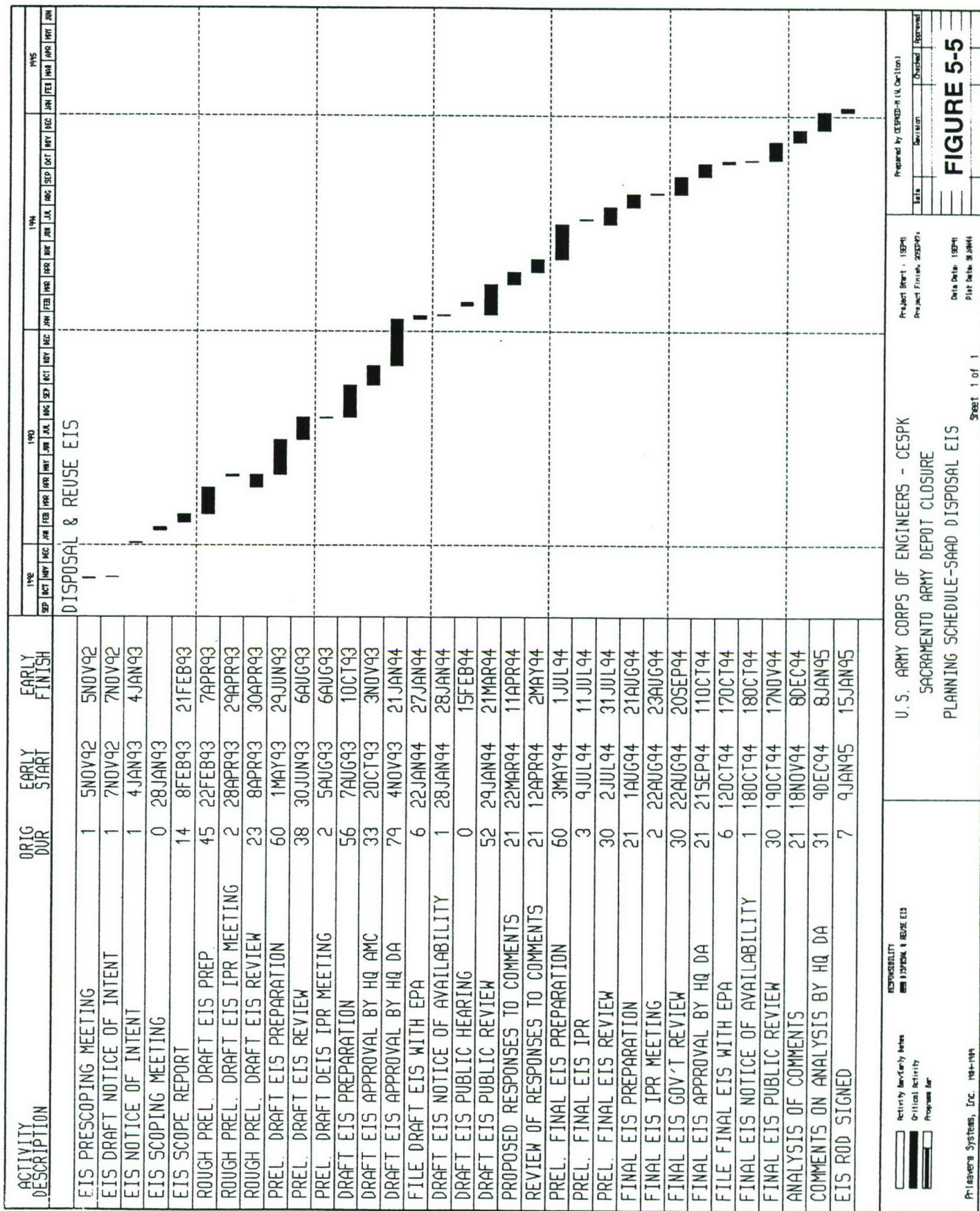
MISSION/OPERATIONAL-RELATED COMPLIANCE PROGRAMS	1992	1993	1994	1995	1996	1997
	<div> <p><i>SADA no longer has an active maintenance mission, so no mission/operational-related compliance activities are included. Since April 1995, SADA has been operated by a 2-person transition force. SADA's mission is closure. There are no Army tenant activities and the majority of property was transferred to the City of Sacramento during March 1995.</i></p> </div>					

FIGURE 5-4

PROJECT MASTER SCHEDULE
FOR MISSION/OPERATIONAL-
RELATED COMPLIANCE PROGRAMS

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA





ACTIVITY DESCRIPTION	ORIG DUR	EARLY START	EARLY FINISH
INITIAL CITY/CORPS OF ENGRS COORDINATION	156	1SEP91	3FEB92
DOD/OEA/CONGRESS REDEVELOPMENT MEETING	1	14APR92	14APR92
CITY COUNCIL APPOINTS COMMISSION MEMBERS	1	8SEP92	8SEP92
CITY VISIT TO SAC, ARMY DEPOT	1	14OCT92	14OCT92
FORMULATION OF CITY'S ALTERNATIVES	42	16JAN93	26FEB93
DRAFT TRAFFIC & INFRASTRUCTURE REPORTS	73	7APR93	18JUN93
PREFERRED ALTERNATIVE SELECTED	352	14APR93	31MAR94
FINAL TRAFFIC & INFRASTRUCTURE REPORTS	286	19JUN93	31MAR94
FINAL REUSE PLAN	36	1APR94	6MAY94
DRAFT EIR PREPARED	60	18MAR94	16MAY94
FINAL EIR PREPARED	57	17MAY94	12JUL94
CITY COUNCIL ADOPTS REUSE PLAN	0		13JUL94

Legend:

- Activity Bar/Early Dates
- Critical Activity
- Program Bar

EXPEDIENT

■ CITY REUSE PLAN & EIR

U.S. ARMY CORPS OF ENGINEERS - CESPK

SACRAMENTO ARMY DEPOT CLOSURE

PLANNING SCHEDULE-CITY REUSE PLAN

Project Start: 1SEP91

Project Finish: 20SEP94

Date: 1SEP91

Plot Date: 20JUL94

Sheet 1 of 1

FIGURE 5-5

ACTIVITY DESCRIPTION	ORIG DUR	EARLY START	EARLY FINISH
IMPLEMENTATION PLAN	240	1SEP91	27APR92
AIRBORNE ELECTRONICS GROUP COMPETITION (#1)	290	1APR92	15JAN93
AIRBORNE ELECTRONICS TRANSITION PERIOD (#1)	137	16JAN93	1JUN93
RADIO GROUP COMPETITION (#5)	309	16DEC92	20OCT93
RADAR GROUP COMPETITION (#4)	346	20NOV92	31OCT93
BRADLEY GROUP COMPETITION (#2)	474	29JUL92	14NOV93
GYRO GROUP COMPETITION (#6)	304	15JAN93	14NOV93
GYRO TRANSITION PERIOD (#6)	5	15NOV93	19NOV93
ELECTRO OPTICS GROUP COMPETITION (#3)	422	6OCT92	1DEC93
TNDE/RADIAC GROUP COMPETITION (#8)	297	1MAR93	22DEC93
WIRE/DATA GROUP COMPETITION (#9)	276	1APR93	1JAN94
ELECTRONIC WARFARE GROUP COMPETITION (#7)	335	15FEB93	15JAN94
RADIO TRANSITION PERIOD (#5)	162	21OCT93	31MAR94
RADAR TRANSITION PERIOD (#4)	151	1NOV93	31MAR94
BRADLEY TRANSITION PERIOD (#2)	137	15NOV93	31MAR94
ELECTRO OPTICS TRANSITION PERIOD (#3)	120	2DEC93	31MAR94
TNDE/RADIAC TRANSITION PERIOD (#8)	99	23DEC93	31MAR94
WIRE/DATA TRANSITION PERIOD (#9)	89	2JAN94	31MAR94
ELECTRONIC WARFARE TRANSITION PERIOD (#7)	75	16JAN94	31MAR94
BASE IN CARETAKER STATUS	0		31MAR94
COMPLETE REAL ESTATE DISPOSAL	0		30SEP97

Activity Bar/Early Dates
Critical Activity
Program Bar

RESPONSIBILITY
■ COMPETITIVE FOR WORKLOAD
■ NON CRITICAL DURING PROGRAM BAR

U.S. ARMY CORPS OF ENGINEERS - CESPK
SACRAMENTO ARMY DEPOT CLOSURE
PLANNING SCHEDULE-SAAD COMPETITION

Prepared by CESPKD-H (N. Corbett)
Date Date: 03/04/94
Plat Date: 03/04/94

FIGURE 5-5

Sheet 1 of 1

ACTIVITY DESCRIPTION	ORIG DUR	EARLY START	EARLY FINISH
DOD SCREENING	30	9NOV91	8DEC91
FED. AGENCY SCREENING	30	9SEP92	8OCT92
MCKINNEY ACT SCREENING	60	29MAY93	27JUL93
STATE/LOCAL SCREENING	20	8JUL93	27JUL93
EIS ROD SIGNED	7	9JAN95	15JAN95
FOST APPROVED BY HQ DA	45	16JAN95	1MAR95
CONVEYANCE DOCUMENTS PREPARED	58	16JAN95	14MAR95
PUBLIC NOI TO SIGN FOST	32	2MAR95	2APR95
RESPOND TO COMMENTS ON FOST	14	3APR95	16APR95
CONVEY FIRST PROPERTY	14	17APR95	30APR95

Activity New/Early Dates
Critical Activity
Program Bar

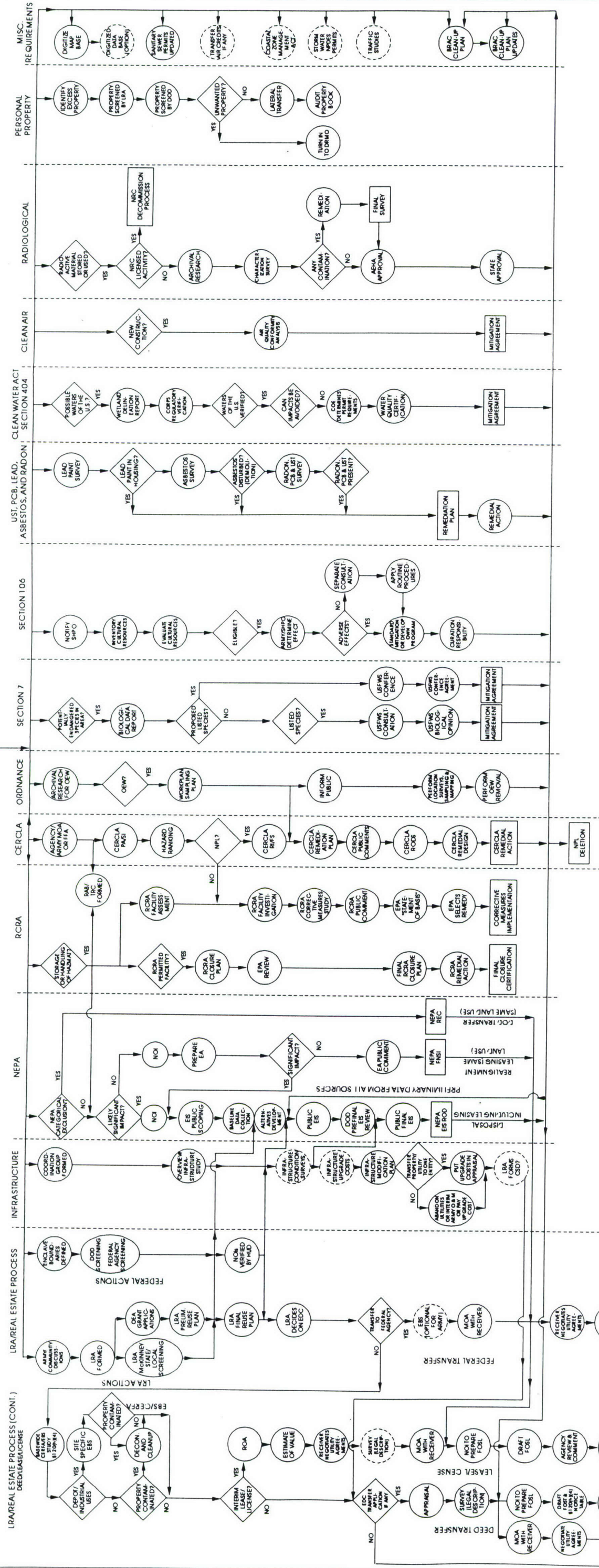
RESPONSIBILITY
REAL ESTATE DISPOSAL
REAL ESTATE LEASING

U.S. ARMY CORPS OF ENGINEERS - CESPK
SACRAMENTO ARMY DEPOT CLOSURE
PLANNING SCHEDULE-SAAD DISPOSAL

FIGURE 5-5

Sheet 1 of 1

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LEGEND

AEHA - Army Environmental Hygiene Agency
AR - Army Regulation
BCP - BRAC Cleanup Plan
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
CSD - Community Service District (for Infrastructure)
DEIS - Draft EIS
DOD - Department of Defense
EA - Environmental Assessment
EBS - Environmental Baseline Survey
EDC - Economic Development Conveyance
EIS - Environmental Impact Statement
FFA - Federal Facilities Agreement
FNS - Finding on No Significant Impact
FOS - Finding of Suitability to Lease
FOT - Finding of Suitability to Transfer
HUD - U.S. Department of Housing and Urban Development
LRA - Local Redevelopment Authority
MOA - Memorandum of Agreement
MOI - Notice of Interest (Mortgage)

NOI - Notice of Intent
NEPA - National Environmental Policy Act
NPL - National Priorities List Site
NPDES - National Pollution Discharge Elimination System
NRC - Nuclear Regulatory Commission
CEA - Office of Economic Adjustment
CEW - Ordnance & Explosive Waste
PAWS - Preliminary Assessment/State Inspection
PCS - Polychlorinated Biphenyl
RAB - Restoration Advisory Board
RCMA - Resource Conservation and Recovery Act
REC - Record of Environmental Consideration
RIFS - Remedial Investigation/Feasibility Study
ROA - Record of Availability
ROO - Record of Decision
SPO - State Historic Preservation Officer
TRC - Technical Review Committee
USFWS - U.S. Fish and Wildlife Service
UST - Underground Storage Tank

PRODUCT
OPTIONAL ACTIVITY
REQUIRED ACTIVITY
DECISION POINT

FIGURE 5-6

**ENVIRONMENTAL DOCUMENTS FOR
ARMY PROPERTY DISPOSAL OR LEASE**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**

RESOURCE	1994	1995	1996	1997
MONITOR VERNAL POOL FAIRY SHRIMP	■	■		
DELINEATE POTENTIAL WETLANDS	■			
<p>Natural and cultural resources compliance requirements have been met and no further action is required.</p>				

FIGURE 5-7

NATURAL AND CULTURAL
RESOURCES SCHEDULE

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

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Chapter 6

Technical And Other Issues To Be Resolved

This section summarizes the technical and other issues identified in Version 1 and their resolution. These issues included information management; the usability of historical data; data gaps; natural (background) levels of elements and compounds in soil, groundwater, surface water, and sediments; risk assessment; state cleanup standards; and program initiatives to complete cleanup requirements as required to meet property transfer schedules.

Eight new issues have arisen and are discussed below, followed by issues being resolved, and finally by issues that have been resolved.

NEW ISSUES

6.1

Deleting SADA Installation from the National Priorities List

This section summarizes unresolved issues pertaining to the removal (i.e., deletion) of the Sacramento Army Depot from the NPL.

6.1.1

BRAC Cleanup Team Action Items

Provide general oversight, involvement, and direction during the deletion process.

6.1.2

Rationale

- The entire 487-acre Depot site was placed on the NPL. This may make financing private sector acquisition and improvements on the clean parcels difficult until the site is deleted from the NPL.
- The remaining groundwater contamination plume (hot spot) will have migrated off-site by 1997—with the delineated NPL site being free of any contamination and groundwater will be at low levels.
- The existing USEPA deletion process is too long and complicated for this site.
- The USEPA deletion process is not logical considering the cleanup process already requires all remedial actions to be verified at the time remediation is completed.

6.1.3

Status/Strategy

USEPA is working on new deletion methods, and is open to further discussion about the SADA site. The Army has suggested to the USEPA that the site be scored again or that deletion be based on no contamination at the site.

6.2

ACOE Real Estate

This section summarizes unresolved issues pertaining to the transfer of real property.

6.2.1

BRAC Cleanup Team Action Items

There are no project team action items for property disposal.

6.2.2

Rationale

- Environmental cleanup at SADA required acquisition of leasehold interests in adjacent property for construction of groundwater monitoring wells.
- Existing real property lease acquisition rules are based on a cumbersome (GSA) system not designed for the fast turn around a BRAC installation needs
- Extra work required for the BRAC property process is unnecessary, counter productive, and time consuming
- Real estate lease acquisition methods are not flexible or speedy to accommodate fast track closure

6.2.3

Status/Strategy

The ACOE should be given the authority to develop property transfer rules/procedures/methods similar to the local commercial market. This needs to be resolved at the DoD level.

6.3

Staffing/Funding

This section summarizes unresolved issues pertaining to staffing and project funding during closure.

6.3.1

BRAC Cleanup Team Action Items

There are no project team action items for staffing and funding.

6.3.2

Rationale

- Environmental staff remaining to complete remediation need long-term employment guarantees to minimize turnover and maintain control of the program.
- Long-term remediation funding needs to be guaranteed prior to closure so that planning can be done for the remainder of the cleanup program.
- The public is wary unless long-term funding is guaranteed.

6.3.3

Status/Strategy

- The Army should develop a system to extend senior staff employment past closure. Continuity and agency relationships are key to fast-track closure. Staff changes during closure slows progress and puts undue stress on staff.
- Multi-year secured funding needs to be made available for long-term projects. BRAC funds are multi-year and should be treated as such.

6.4

Contracting After Closure

This section summarizes unresolved issues pertaining to contracting after closure.

6.4.1

BRAC Cleanup Team Action Items

There are no project team action items for contracting after closure.

6.4.2

Rationale

- The remaining environmental staff is small, making even small chores difficult to handle.
- The remaining environmental staff have to deal with a lot of closure issues (even those that are not environmental). Therefore, they need more autonomy and flexibility to “tie up loose ends.”

- Long distance contracting does not work. The installation does not have sufficient control over the contracting office to control the quality and timeliness of the work.

6.4.3

Status/Strategy

- Place more authority in the hands of the BEC (or last persons remaining) to handle final closeout issues (even non-environmental issues)
- Create a miscellaneous fund account to deal with unknowns
- Contract (MOA) with local ACOE District for needs

6.5

RAB/Long-Term Public Involvement

This section summarizes unresolved issues pertaining to the RAB and long-term public involvement.

6.5.1

BRAC Cleanup Team Action Items

Determine the amount of long-term involvement the RAB wants after closure of the installation.

6.5.2

Rationale

- How does an installation carry on RAB involvement after 1996 when all environmental staff are gone?
- How does an installation provide public notices of RAB meetings after 1996 when all environmental staff and funding are gone?

6.5.3

Status/Strategy

- Need to establish guidance to determine a time at which remediation is far enough along that the RAB is no longer needed, or transfer function to other local government agency, but the public is still assured of input.
- Contract with the local ACOE District to run as a FUD site.

6.6

Long-Term Cleanups/Monitoring

This section summarizes unresolved issues pertaining to long-term cleanup and monitoring.

6.6.1

BRAC Cleanup Team Action Items

Decide the amount of involvement desired during the long-term cleanup of groundwater contamination and monitoring of past remedial activities.

6.6.2

Rationale

Who will be responsible for oversight and management of long-term remedial actions (i.e., operating the groundwater pump and treat system) after 1996 and to completion when the environmental staff are gone?

6.6.3

Status/Strategy

Long-term oversight needs to be transferred to the ACOE or other entity to manage after environmental staff are gone. Operation as a FUD site is suggested.

6.7

Radiation Surveys

This section summarizes unresolved issues pertaining to radiation surveys to close out facilities.

6.7.1

BRAC Cleanup Team Action Items

There are no project team action items for radiation surveys.

6.7.2

Rationale

- Tenants should be responsible for all radiation surveys and NRC license closeouts if they are responsible for the source.
- The amount of time required to close out radiation issues and the complexity of this task is immense.

- Use local contractors to the extent possible. Long distance contracting does not work. Once the critical surveys are done the tenant's responsible person moves on to other crises and the final closeout reports and documentation do not get done in a timely manner.

6.7.3

Status/Strategy

Cannot let tenant representative leave a facility until it has been completely closed to the satisfaction of the Depot and all regulatory agencies involved. Total commitment is a must.

6.8

Emission Reduction Credits

This section summarizes issues that pertained to the close out of air quality permits and the capture of ERCs.

6.8.1

BRAC Cleanup Team Action Items

There are no project team action items for preserving emission reduction credits.

6.8.2

Rationale

Air quality permits are typically renewed annually. During the annual renewal the source must remit fees associated with these permits. If a process or emission unit is permanently discontinued, a facility may either surrender the permit at the time of renewal or submit an application for ERCs for the process or emission unit. The ERC provides the holder with the ability to emit a specific pollutant at a specific annual limit. ERCs have a monetary value and may be sold or traded within specific geographical limitations. Therefore, ERCs should be protected as a valuable asset for the Army. Also, negotiations with the Air Resources Board may be needed regarding whether ERCs exist. For instance, potential credits related to paint booths need to be negotiated. The Air Resources Board sees paint booths as non-credit items if the booths are still in place; however, the Depot sees them as credit items if they are not in use (i.e., not removed).

6.8.3

Status/Strategy

Determine the value of the ERCs and, depending on the circumstances, whether to transfer them to another DoD installation within the air basin or to sell them. Specific guidance needs to be established as to how ERCs are handled and how the funds from the sale are accounted for. Negotiate the ERC/paint booth issue with the Air Resources Board.

6.8.4

Final Resolution

With McClellan AFB on the BRAC 95 closure list, the ERCs are being valued and prepared for sale. Remove the paint booths if removal is cost-effective to maintain ERC credits.

ISSUES BEING RESOLVED

6.9

Data Usability

This section summarizes issues regarding the management of information gathered and used in the base environmental restoration and compliance programs.

Two general types of databases were used to record work done at the Depot: a custom-made database(s) for the IRP program and a commercially available database (Microsoft Access) used to record data for the EBS reports. Each database has been managed by a separate contractor that was responsible for its respective work efforts.

Kleinfelder was responsible for the data generated as part of the IRP program. Foster Wheeler Environmental was responsible for data generated in the process of preparing the EBS reports. Since Kleinfelder has also been an active participant in the preparation of the EBS reports, data was transferred from its database to the EBS database without any problem. Both contractors will be placing documents on CD-ROM for future ease of reference.

6.9.1

BRAC Cleanup Team Action Items

- Transfer data into a software program that has 3-dimensional (3-D) visualization capability, with remote access (modem) for Army, state, and regulatory agency use.
- Develop the IRP administrative record on CD-ROM.

6.9.2

Rationale

All sites are under remediation. Use of the existing electronic database will continue. New data will be added as collected during the remediation process. The comprehensive (3-D) conceptual site models are critical in expediting interagency (Army, Cal/EPA, USEPA) agreements on how to resolve environmental conditions at the Depot, when encountered.

6.9.3

Status/Strategy

- Comprehensive 3-D models are in the initial stages of development.
- All historical investigation data at the Depot has been loaded into the IRP database.
- IRP data generated in the future will be loaded into the IRP database at least quarterly.
- All EBS-related data has been loaded into the database.
- The Depot, ACOE, and agencies have access to the EBS database.
- Kleinfelder and Foster Wheeler Environmental will continue to coordinate on the EBS database.
- The entire IRP administrative record will be copied onto CD-ROM.

6.9.4

Final Resolution

Three-D site models were developed for individual areas of concern and have been used to present data to the public in a manner that was easily understandable. Data are added to the database on a continuing basis and will be used as needed to update and refine site models. The administrative record is to be copied onto CD-ROM.

6.10

Data Gaps

This section summarizes issues that pertained to the determination and collection of data needed to complete the Depot environmental restoration program.

6.10.1

BRAC Cleanup Team Action Items

Review the following data items for information management.

- Additional data needs to be collected to close data gaps on several Group B and C sites.
- Offsite groundwater sampling was expanded to define the extent of contamination.
- Additional data on air sparging system at Parking Lot 3 and Freon 113 Area was being collected. Data was input into a chemical transport model.
- USEPA's request for re-verification of lab data from past tests. Additional samples need to be collected at Tank 2 for re-verification of cleanup due to EPA Inspector General concerns over data validation.

6.10.2

Rationale

Effective identification and filing of data gaps will permit the development of comprehensive conceptual site models for site characterization and risk assessment. Effective analysis of data gaps will also facilitate the completion of RI efforts so that appropriate remedial action can be identified and evaluated. This information will also assist in the identification of clean and remediated areas at the Depot. The USEPA request for re-verification of the lab data is required due to the failure of the analytical laboratory to supply the QA/QC data needed to perform data validation according to EPA's functional guidelines for CLP-type data packages.

6.10.3

Status/Strategy

This work effort has been completed for all remediation sites at the Depot.

6.10.4

Final Resolution

- Additional data were collected for several of the Group B and C sites to fill data gaps identified by the Army and regulatory agencies. These sites have subsequently become "No Further Action" sites based on the data collected. The data have been integrated into the Basewide RI and FS reports and health risk assessment.
- Additional wells will be installed offsite to monitor the extent of groundwater contamination and monitor the progress of the remediation. Quarterly groundwater sampling is ongoing.
- Additional data collection at the Parking Lot 3 and Freon 113 areas has been completed. The data were input into a chemical transport model and used to evaluate the potential for leaching to groundwater. Residual soil concentrations are not expected to impact groundwater. No known data gaps remain.
- Re-verification is required at one site where the data cannot be fully validated with existing information. The QA/QC program is being modified for future verifications.

6.11

Basewide Remedial Action Strategy

This section summarizes issues pertaining to the completion of remedial actions required to complete the Depot environmental restoration and compliance programs.

6.11.1

BRAC Cleanup Team Action Items

- Complete sitewide feasibility study
- Prepare proposed plan
- Have ROD signed
- Complete design phase and contract for remediation of the Locomotive Repair Facility
- Remove debris from the Contractor Spoils Area

6.11.2

Rationale

A Basewide ROD, remediation in place, and agency approvals are actions required to remove the Depot from the NPL list.

6.11.3

Status/Strategy

All previously identified remediation areas are in the process of being cleaned up.

6.11.4

Final Resolution

- The Sitewide FS was completed.
- A proposed plan was issued in November 1994 and a public comment period was held from November 22, 1994 through December 21, 1994. In addition, a public meeting was held on December 7, 1994.
- The Basewide ROD was signed January 17, 1995.
- The Locomotive Repair area became a pilot test site for bioremediation of petroleum hydrocarbons. The bioremediation was successfully completed in May 1995.
- Debris from the Contractor Spoils Area will be removed in 1995 when the South Post Burn Pits stabilization contractor begins work.

6.12

Interim Monitoring of Groundwater and Surface Water

This section summarizes issues pertaining to the interim monitoring of groundwater.

6.12.1

BRAC Cleanup Team Action Items

Determine frequency of long-term monitoring.

6.12.2

Rationale

Interim monitoring of groundwater contamination is necessary to track the movement of contamination both on- and off-site to determine if contamination from non-Depot sources is migrating onto the Depot property, and to verify that cleanup levels have been obtained.

6.12.3

Status/Strategy

On- and off-site groundwater monitoring wells are monitored quarterly for chemicals of concern. Monitoring well water levels are monitored monthly. In addition, the groundwater extraction and treatment plant is sampled monthly. Influent and effluent chemical concentrations are measured.

6.12.4

Final Resolution

The Army will develop a groundwater monitoring plan, including a plan for well closure, for review by the regulatory agencies. Monitoring frequencies will vary depending on the well locations and data required. Rationale for the monitoring frequencies and proposed well closures will be documented.

RESOLVED ISSUES

6.13

Excavation of Contaminated Materials

This section summarizes issues pertaining to the excavation of contaminated materials.

6.13.1

BRAC Cleanup Team Action Items

There are no project team action items for excavation of contaminated materials.

6.13.2

Rationale

Excavation of contaminated materials is necessary to remove sources of potential groundwater contamination and to protect human health and the environment.

6.13.3

Status/Strategy

Contaminated soil was excavated from the Pesticide Mix Area and Battery Disposal Well during the remedial investigation. Soil in the Building 300 Burn Pit will be excavated and stabilized at the South Post Burn Pits under a remediation contract now underway.

6.13.4

Final Resolution

Contaminated soil from the Building 300 Burn Pits will be excavated in 1995. Additional excavations were conducted at several areas where USTs were located. No additional areas requiring excavation have been identified.

6.14

Initiatives for Accelerating Cleanup

This section summarizes issues pertaining to accelerated cleanup and lists key factors that have been used in accelerating cleanup.

6.14.1

BRAC Cleanup Team Action Items

There are no project team action items for accelerated cleanup.

6.14.2

Rationale

Accelerated cleanup will reduce government costs; reduce the potential for the spread of contamination; and further protect human health and the environment.

6.14.3

Status/Strategy

- **Priority sites**—Priority sites were handled early as operable units.

- **Team approach was used**—A strong team was built consisting of the Army BEC, project managers from regulatory agencies, and contractors to resolve issues and implement innovative solutions.
- **Risk-based cleanup**—Obtained agreement from regulators to derive risk-based cleanup standards.
- **Concurrent reviews**—Report preparation and review process were conducted by double-tracking to eliminate delays.
- **Tiger Team**—Expedited document preparation and review/approval process by forming a working team for preparation of the sitewide RI/FS and ROD.

6.14.4

Final Resolution

All remediation is underway or complete.

6.15

Remedial Actions

This section clarifies the issue of when remedial actions must be in place after completion of investigation and study (CERCLA §120(e)(2)).

6.15.1

BRAC Cleanup Team Action Items

There are no project team action items for implementing remedial actions.

6.15.2

Rationale

The FFA requires that remedial actions be in place 15 months after the ROD was signed.

6.15.3

Status/Strategy

The Depot is in compliance. The remedial contractor selection process was started early to ensure that the schedule was met.

6.15.4

Final Resolution

Remedial actions are complete or underway, and all requirements have been met.

6.16

Review of Selected Technologies for Application of Expedited Solutions

This section summarizes unresolved issues pertaining to the review of selected technologies for the application of expedited solutions.

6.16.1

BRAC Cleanup Team Action Items

There are no project team action items for review of selected technologies.

6.16.2

Rationale

The implementation of new technologies may reduce the time required to remediate certain areas.

6.16.3

Status/Strategy

The Depot has experimented with new technology (i.e., air sparging) and reduced the time necessary to remediate groundwater contamination.

6.16.4

Final Resolution

Air sparging for Freon 113 has been successfully completed. Construction of horizontal wells at the South Post Burn Pits is underway.

6.17

Overlapping Phases of the Cleanup Process

This section summarizes issues about overlapping phases of the cleanup process.

6.17.1

BRAC Cleanup Team Action Items

There are no project team action items. Overlapping phases of the cleanup process occurred.

6.17.2

Rationale

Overlapping phases of the cleanup process is the most efficient method to expedite the remediation process. The BCT must maintain control of the projects until completion, to ensure coordination and success.

6.17.3

Status/Strategy

The Depot has, in the past, overlapped phases of the cleanup process and therefore finished ahead of the FFA deadlines.

6.17.4

Final Resolution

Cleanup will be successfully completed on a fast-track schedule.

6.18

Updating the EBS and Natural/Cultural Resources Documentation

This section summarizes the issues regarding updating the EBS and natural/cultural resources documentation.

6.18.1

BRAC Cleanup Team Action Items

Once the Community Reuse Plan is approved, the EIS will need to be evaluated to ensure that natural resource impacts have been properly addressed.

6.18.2

Rationale

The EBS and natural/cultural resources documentation must be current to dispose of the Depot facilities.

6.18.3

Status/Strategy

- The EBS documentation was completed for each of the study areas. Thus, each EBS was current at the time the parcel was ready for disposal. Updates will be incorporated as new information becomes available for the study areas retained by the Army.

- No cultural resources documentation updates are required as the Depot contains no known sites eligible for, or on, the National Register; and compliance with Section 106 of the National Historic Preservation Act has been completed, as indicated in the EIS.
- Outstanding issues regarding natural resources documentation extend beyond those issues evaluated in the EIS. Updates on *linderiella*, or wetland areas, were incorporated into EIS mitigation plans and any deed transfers. Effects on burrowing owls and *linderiella*, from the City of Sacramento removing the railroad tracks, and new aspects of their reuse plan over the next three or more months, created new problems to be resolved before the EIS was completed. Formal arrangements were made to prepare mitigation plans and conduct the wetland delineation.

6.18.4

Final Resolution

- The EBS documents were finalized as needed for property disposal, and all EBSs are scheduled to be finalized by October 1995. EBS study areas with DoD area types 4 or less were given priority to facilitate property transfer to the City of Sacramento. Areas where remediation was not complete were given lower priority. Once all remedial action has been taken, the EBS documents for those study areas will be finalized and the property made ready for transfer.
- Before the City of Sacramento adopted both its Reuse Plan and its Environmental Impact Report (for rezoning the site) the documents were reviewed by the agencies, the Army and Foster Wheeler Environmental. The City's documents were inconsistent with each other and with the Army's EIS. Foster Wheeler Environmental took the lead in resolving the conflicts and helping the City to structure its documents so they would be consistent.

6.19

Implementing the Policy for Onsite Decision Making

This section summarizes issues to implement policy for on-site decision making.

6.19.1

BRAC Cleanup Team Action Items

There are no project team action items for clarifying on-site decision making policy. The Depot, Cal/EPA, and USEPA project managers have been delegated authority and keep management sufficiently informed so as to maintain authority to make on-site decisions close to real time.

6.19.2

Rationale

Developing a policy for on-site decision making will minimize delays in the cleanup process when field conditions are different from those anticipated.

6.19.3

Status/Strategy

The Depot continues to practice on-site decision making through heavy dependence on the following:

- Partnering and understanding that all parties have the same common goal.
- No fear, mutual trust, concurrent reviews, and sharing of information as it becomes available.
- Shared leadership, joint brainstorming and decision making for best solutions rather than negotiated compromises.
- Each agency keeps its respective chain-of-command fully informed, preventing bottlenecks in the process.
- A true desire (bias) for action, believing the true success of a program is in remediation (cleanup) of the sites.
- Contractors have the flexibility to modify plans in the field as conditions change, so long as at the agencies are informed and the contracting officer at the ACOE is notified of the change and reasons.

6.19.4

Final Resolution

Continued use of the strategy items listed above have resulted in rapid progress toward clean closure.

6.20

Community Coordination Regarding Environmental Justice

This section summarizes the environmental justice issues incorporated into this BCP.

6.20.1

BRAC Cleanup Team Action Items

There are no project team action items to resolve regarding coordination on environmental justice issues.

6.20.2

Rationale

No segment of the population should have to bear a disproportionate share of adverse human health or environmental effects of a proposed action. Often these adverse effects disproportionately affect the minority and low-income populations.

6.20.3

Status/Strategy

The remaining remedial activity is either on-site or over the plume along the southwest edge of the Depot. There are no residential areas affected by the plume. The area affected includes only industrial and commercial users and vacant land. No drinking wells are affected by the plumes. Residents within the immediate vicinity of the Depot (some of which are minority) are represented on the RAB. The RAB ensures that the Depot remediation programs do not adversely affect human health or the environment.

Also, Packard Bell Company moved its corporate headquarters to the portion of the Depot that has been transferred to the City of Sacramento. Packard Bell is now hiring new employees and provides some hiring preferences for low-income and minorities.

6.20.4

Final Resolution

Incorporated environmental justice analysis into this BCP.

6.21

Information Management

This section summarizes issues pertaining to the validity of using historical data sets in the base environmental restoration program.

6.21.1

BRAC Cleanup Team Action Items

There are no project team action items for information management. All historical data has been validated and either accepted or is undergoing further review by the BCT.

6.21.2

Rationale

Historical analytical data can contribute to the completion of site characterizations and risk assessments by filling data gaps. Current and future data from each data collection system are

critical to the completion of all site characterization efforts, comprehensive conceptual model development, risk assessments, and ultimately the selection of remedial actions to protect human health and the environment.

6.21.3

Status/Strategy

This work effort has been completed for all remediation sites at the Depot.

6.21.4

Final Resolution

This work effort has been completed for all remediation sites at the Depot.

6.22

Background Levels

This section summarizes issues pertaining to the development of background levels required to establish cleanup standards.

6.22.1

BRAC Cleanup Team Action Items

There are no project team action items. Background levels have been developed for metal concentrations in soil and groundwater. Background levels for volatile organics have been established at zero. Background levels for surface water are not required because surface water contamination is not an issue.

6.22.2

Rationale

Background concentration values of elements in the soil, groundwater, surface water, and sediments need to be determined before risk assessments can be conducted. The values must be representative of what is *naturally* occurring and what is occurring due to anthropogenic sources. USEPA and Cal/EPA must concur with these values.

6.22.3

Status/Strategy

This work effort has been completed at the Depot.

6.22.4

Final Resolution

This work effort has been completed at the Depot.

6.23

Risk Assessments

This section summarizes issues that pertain to risk assessments required to complete the Depot environmental restoration and compliance programs.

6.23.1

BRAC Cleanup Team Action Items

Complete the Basewide Health Risk Assessment.

6.23.2

Rationale

All remediation areas at the Depot are being cleaned up to meet residential standards. This minimizes the potential for future reuse incompatibility. The South Post Burn Pits involves stabilization and will result in a use restriction.

6.23.3

Status/Strategy

The Basewide Health Risk Assessment was completed in June 1995. The assumptions and approach were coordinated with the regulatory agencies to expedite approval of the risk assessment.

6.23.4

Final Resolution

The Basewide Health Risk Assessment was submitted for review in April 1994. Comments received by the regulatory agencies were addressed and changes to the report were made, as appropriate. The final document was submitted in June 1995.

6.24

Protocols for Remedial Design Reviews

This section summarizes issues that pertained to protocols for remedial design reviews.

6.24.1

BRAC Cleanup Team Action Items

Review remedial designs for all sites.

6.24.2

Rationale

Ensure that remedial designs are technically sound and meet the requirements of the ROD.

6.24.3

Status/Strategy

Remedial designs are reviewed by technical staff at the ACOE, USEPA, and state regulatory agencies at the 50 percent design stage. The design may be revised based on technical comments. Remedial designs are reviewed again at the 100 percent design stage.

6.24.4

Final Resolution

Remedial designs for the Burn Pits stabilization, the off-site groundwater remediation in the South Post area, and the groundwater remediation at the Parking Lot 3 area, have been reviewed and approved.

6.25

Conceptual Models

This section summarizes issues pertaining to the development and use of conceptual models.

6.25.1

BRAC Cleanup Team Action Items

Complete sitewide conceptual model and continue development of comprehensive 3-D site models (see Chapter 6.9, Data Usability)

6.25.2

Rationale

Use of conceptual and 3-D models provide a visual illustration of the lateral and vertical extent of contamination and allow for simulation of various conditions to quickly understand their impacts on contamination. Use of these models assists in resolving any remaining issues quickly.

6.25.3

Status/Strategy

Groundwater modeling was completed. Modeling of soil contamination was completed for Parking Lot 3 and Freon 113 areas.

6.25.4

Final Resolution

The groundwater modeling has been completed. The modeling results were used to design the expansion of the South Post Groundwater Treatment System. The modeling of soil contamination at the Parking Lot 3 and Freon 113 Areas has been completed.

6.26

Cleanup Standards

This section summarizes issues that pertained to the establishment of cleanup standards.

6.26.1

BRAC Cleanup Team Action Items

- Develop cleanup standards for chemicals of concern in soil and groundwater at each site.
- Establish cleanup standards for cleaning industrial buildings that will be vacated and likely reused for industrial purposes. Other than for PCB levels, there is little literature available in this area other than conservative health-based risk assessment criteria.

6.26.2

Rationale

In the absence of federal or state mandated cleanup standards for hazardous wastes or constituents in soils, remediation criteria for contaminated soils are provided through site-specific risk assessments. Final Remediation Goals (FRGs) are developed based on the site-specific risks, with consideration given to state regulations, e.g., protection of groundwater and use of Best Demonstrated Available Technology (BDAT).

6.26.3

Status/Strategy

Cleanup levels have been developed for OU sites and were developed for all other sites in the Sitewide FS.

6.26.4 Final Resolution

Cleanup levels were developed for all remaining sites in the Sitewide FS and agreed to in the Basewide ROD, which was signed in January 1995.

6.27 Hot Spots Removals

All hot spots were addressed through remedial actions as selected in the Basewide ROD.

6.28 Identification of Clean Properties

This section summarizes issues with regard to identifying clean properties.

6.28.1 BRAC Cleanup Team Action Items

Integrate results of building surveys and IRP site investigations to define areas that are CERFA clean.

6.28.2 Rationale

Clean study areas need to be defined to evaluate reuse alternatives prior to base closure and to expedite disposal of clean areas.

6.28.3 Status/Strategy

Proposed disposal/reuse study areas are identified in Chapter 3 of this BCP. EBSs are prepared prior to transfer.

6.28.4 Final Resolution

This action is complete. Clean properties were identified in the CERFA study prepared by the Army Environmental Center. However, these parcels were relatively small in size and not generally suitable for disposal. The EBS study further identified facilities that had been cleaned to a level suitable for transfer under CERCLA Section 120(h). Properties so identified have been transferred (see Chapter 2.5).

6.29

Improved Contracting Procedures

This section summarizes issues with regard to improved contracting procedures.

6.29.1

BRAC Cleanup Team Action Items

There are no project team action items to improve contracting procedures.

6.29.2

Rationale

Improving contracting procedures may expedite remediation by reducing the time necessary to obtain a contractor to perform the technical work.

6.29.3

Status/Strategy

The Depot uses the ACOE to hire and supervise contractors.

6.29.4

Final Resolution

Contractors were hired as necessary. However, an unexpected protest to the Burn Pits contract resulted in several months lost as the challenge awaited resolution. Changes are required in contracting to expedite protests. It is beyond the BCT control to institute these changes. Government contracting rules need to be changed. Also, on-call small contractors are needed at the ACOE to handle small items. The contracting process needs refining and improvements to make it faster.

6.30

Interfacing with the Community Reuse Plan

This section summarizes issues with regard to interfacing remediation activities with the Community Reuse Plan.

6.30.1

BRAC Cleanup Team Action Items

There are no project team action items for interfacing with the Community Reuse Plan.

6.30.2

Rationale

Understanding the Community Reuse Plan may be helpful in determining the level of remediation required.

6.30.3

Status/Strategy

The Community has developed a Reuse Plan. All remediation meets residential cleanup standards.

6.30.4

Final Resolution

The Community Reuse Plan was adopted by the City of Sacramento on November 1, 1994. It called for the site to remain in industrial use. Since all contamination was remediated to meet residential standards, no additional changes were needed as a result of the Reuse Plan.

6.31

Bias for Cleanup Instead of Studies

Bias for action has been the Depot's philosophy from the outset of the program. With the assistance and cooperation from the regulatory agencies, the Depot has been able to expedite and focus on cleanups while maintaining high quality studies.

6.32

Expert Input on Contamination and Potential Remedial Actions

This section summarizes issues about obtaining expert input on contamination and remedial actions.

6.32.1

BRAC Cleanup Team Action Items

There are no project team action items for obtaining expert input on contamination or potential remedial actions.

6.32.2

Rationale

Use of experts can reduce the time it takes to reach target cleanup levels.

6.32.3

Status/Strategy

Selection of qualified experts for implementing remedial actions is accomplished through the RFP process. Contractors have been selected for all remediation projects.

6.32.4

Final Resolution

The Locomotive Repair Facility was cleaned up during the bioremediation pilot test. Additional cleanup by a contractor is not anticipated.

6.33

Presumptive Remedies

Not applicable. Studies have been completed and cleanup is in progress.

6.34

Partnering (Using Innovative Management, Coordination, and Communication Techniques)

This section summarizes issues with regard to using innovative management techniques, such as partnering.

6.34.1

BRAC Cleanup Team Action Items

There are no project team action items for partnering.

6.34.2

Rationale

Partnering may result in increased trust and improved relations between the parties involved in the cleanup process, thereby improving and expediting the process.

6.34.3

Status/Strategy

The Depot, contractors and agency personnel have worked together for many years and have formed an effective partnership to identify contamination and expeditiously cleanup the installation.

6.34.4

Final Resolution

The team work exhibited by all parties involved in the disposal and reuse of the Depot was distinguished. Contractors stepped up efforts to have the EBS reports, CERCLA studies, and RODs done as soon as possible, giving priority to those areas most likely needed. Agency staff (USEPA, Cal/EPA and the RWQCB) provided expeditious reviews and comments on documents. The FOST documents were also given top priority for review. As a result, the transfer of 306 acres (almost two-thirds of the installation) occurred on March 3, 1995, two years ahead of the legislated July 1997 closure date.

6.35

Infrastructure Disposal

This section summarizes issues regarding disposal of the Depot's infrastructure.

6.35.1

BRAC Cleanup Team Action Items

The following items need to be performed:

- Have utilities and City/County perform condition surveys.
- Prepare economic evaluation of infrastructure, considering life-cycle costs for use in negotiating with the utility companies and the City/County of Sacramento.
- Obtain funds to upgrade infrastructure, if necessary.
- Prepare transfer documents, to transfer title of infrastructure.

6.35.2

Rationale

Land disposal will be extremely difficult without adequate infrastructure. Infrastructure will rapidly degrade once it is not being used.

6.35.3

Status/Strategy

This is a very difficult issue. The Army does not want to invest funds into installations that are being disposed. Potential options are discussed in Appendix D.

6.35.4

Final Resolution

Infrastructure Condition Surveys were completed for water, electrical, natural gas, telecommunications, storm drainage, sanitary sewer, railroad system, internal road system, and the street lighting system with results being furnished to the Corps' Real Estate Department for use in negotiation purchase of the Depot. The surveys included cost estimates to bring the systems into compliance with local codes and an estimated fair market value. As part of the economic development conveyance request, the City of Sacramento requested that all infrastructure be conveyed to the City. This was accomplished on March 3, 1995.

Chapter 7

References

- ACOE (U.S. Army Corps of Engineers). 1994. Sacramento Army Depot Disposal and Reuse Environmental Impact Statement. Final, October 1994, Sacramento, California. Technical assistance from Foster Wheeler Environmental Corporation, Sacramento, California.
- ACOE. 1993. Environmental Assessment for Sacramento Army Depot. Prepared by Ebasco Environmental, Sacramento, California, July.
- ACOE. 1993. Evaluation of cultural resources at Sacramento Army Depot, Sacramento County, California. U.S. Army Corps of Engineers, Sacramento District, Sacramento, California, June.
- ACOE. 1993. Environmental Planning Guide. Sacramento Army Depot. Prepared by Ebasco Environmental, Sacramento, California, February.
- ACOE. 1993. Draft EBS/FOST Work Plan. Prepared for the ACOE, Sacramento District, by Ebasco Environmental. September.
- ACOE. 1993. Draft Field Sampling and Analysis Plan. Prepared for the ACOE, Sacramento District, by Ebasco Environmental. September.
- ACOE. 1992. Memorandum from Tom Coe: Authorization of fill activity into water of the United States associated with Sacramento Army Depot HTRW remediation. Action 199200751. October 15.
- ACOE. 1992. Air Toxics "Hot Spots" Emission Inventory Biennial Update. Sacramento Army Depot. Prepared by Ebasco Environmental, Sacramento, California, June.
- ACOE. 1991. Air Toxics "Hot Spots" Emission Inventory. Sacramento Army Depot. Prepared by Ebasco Environmental, Sacramento, California, July.
- ACOE. 1991. Preliminary Draft, Natural Resources Management Plan for Sacramento Army Depot and Benicia Army Cemetery.
- ACOE. 1990. Data from flow synthesis for Jackson Road Pump Plant. Jeff Harris. February 27.
- ACOE. 1987. Master Plan Report. Sacramento Army Depot, 1987.
- ACOE. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program, Environmental Laboratory, Waterways Experiment Station, Vicksburg, Mississippi. Technical Report Y-87-1.

- ACOE. 1979. Intensive cultural resources survey of the Sacramento Army Depot. Prepared by staff archaeologists of the Sacramento District, U.S. Army Corps of Engineers.
- Alt, J.N., D.P. Schwartz, and D.R. McCrumb. 1977. Regional geology and tectonics, Volume 3 of the earthquake evaluation studies of the Auburn Dam area: Report by Woodward-Clyde Consultants to the U.S. Bureau of Reclamation, Denver; 11p. plus appendices.
- Anonymous. 1983. Species list on File, Environmental Office, Sacramento, California.
- Beck, R.W. and Associates. 1991. Preliminary Draft, Source Reduction and Recycling Element for the Unincorporated Area of Sacramento County. Report for the County of Sacramento Department of Public Works.
- Bennett, J.H. 1987. Vacaville-Winters Earthquakes, 1892, California Geology, v. 40, No. 4, p. 75-83.
- Bennyhoff, J.A. 1977. Ethnogeography of the Plains Miwok. Center for Archaeological Research at Davis Publication Number 5. University of California, Davis.
- Bennyhoff, J.A., V. Benté, M. Hilderman-Smith, and T. Jones. 1982. Emigrant Summit Trail: archaeological investigations and historic research of the Trail from Caples Lake to Maiden's Grave. Prepared for the U.S. Forest Service, Eldorado National Forest, Placerville, California.
- Building Technology Incorporated. 1984. Historic Properties Report, Sacramento Army Depot and Benicia Army Cemetery. Prepared for the National Park Service, U.S. Department of the Interior.
- California Stormwater Task Force. 1993. California Stormwater Best Management Practices Handbook: Cal. Stormwater Task Force, Vol 1-3.
- California Employment Development Department. 1991. Annual Planning Information, Sacramento Metropolitan Statistical Area. Labor Market Information Division. Sacramento, California. June 1991.
- California Employment Development Department. 1992. The latest local unemployment. Sacramento Bee, March 6, 1993.
- California Environmental Protection Agency. 1993. Summary of Mobile Emissions for Sacramento County for the Years of 1990 and 2010. California Environmental Protection Agency, Sacramento, CA.
- CARB (State of California Air Resources Board). 1991a. California Air Quality Data. Summary of 1991 Air Quality Data Gaseous and Particulate Pollutants. Vol. 23. Technical Support Division, Sacramento, California.

- CARB. 1991b. CARB Fact Sheet 39. CARB Technical Support Division, Sacramento, California, November 1991.
- CARB. 1990. California Air Quality Data. Summary of 1990 Air Quality Data Gaseous and Particulate Pollutants. Technical Support Division, Sacramento, California.
- Chartkoff, J.L. and K.K. Chartkoff. 1984. The archaeology of California. Stanford University Press, Stanford, California.
- City of Sacramento. 1992. Zoning Ordinance. Revised March 1992.
- City of Sacramento. 1990. Population and Housing Data by Community Plan Area. City of Sacramento Planning and Development Department, Sacramento, California, February 1990.
- City of Sacramento. 1988. City of Sacramento General Plan. January 1988.
- City of Sacramento. 1987. General Plan Update, Draft Environmental Impact Report.
- City of Sacramento. 1987a. South Sacramento Community Plan. August 1986 to March 1987. Draft Environmental Impact Report, General Plan Update. March 1987.
- CNPS (California Native Plant Society). 1988. Inventory of Rare and Endangered Vascular Plants of California. J.P. Smith and K. Berg (eds.). CNPS, Sacramento, California.
- Cutter, D.C. 1957. The Diary of Ensign Gabriel Moraga's Expedition of Discovery in the Sacramento Valley, 1808. Glen Dawson.
- Depot (Sacramento Army Depot). 1980. The Intercom (newspaper). February 28, 1980.
- Depot. 1977. Depot History—1948 through 1972. History of the Sacramento Army Depot.
- Depot. 1974. Letter to EPA, Region IX, regarding washrack discharges to storm drains. November 22, 1974.
- Depot. 1952. Depot History—1952. History of the Sacramento Army Depot.
- DoD (U.S. Department of Defense). 1993. BRAC Cleanup Plan (BCP) Guidebook. Fall 1993.
- DWR (California Department of Water Resources). 1974. Evaluation of Groundwater Resources: Sacramento County, Bulletin No. 118-3. Prepared in cooperation with County of Sacramento, 141p. 1 plate.
- Dyer, E. 1864. Survey Notes, Township 8N, Range 5E, MDM. Manuscript on file at the General Land Office, U.S. Bureau of Land Management, Sacramento.

- Eaton, J. 1986. Tectonic Environment of the 1892 Vacaville-Winters Earthquake, and the Potential for Large Earthquakes along the Western Edge of the Sacramento Valley, California; United State Geological Survey Open File Report 86-370, 16p.
- Ebasco Environmental. 1993. Historic Resources Overview and Management Plan for the Benicia Army Cemetery, Solano County, California. Prepared for U.S. Army Corps of Engineers, Sacramento District, Sacramento, California.
- Ebasco Environmental. 1992. Natural Resources Management Plan for the Sacramento Army Depot. Prepared for Sacramento Army Depot, Sacramento, California.
- Ebasco Environmental. 1990a. Preliminary Draft Air Toxic "Hot Spots" Emission Inventory Plan. Prepared for Sacramento Army Depot, Sacramento, California.
- Ebasco Environmental. 1990b. Preliminary Draft Transportation Management Plan for the Sacramento Army Depot. Prepared for Sacramento Army Depot, Sacramento, California.
- EPA (U.S. Environmental Protection Agency). 1985. Compilation of Air Pollutant Emission Factors, Volume I and II, Fourth Edition, Supplement D. PB-126945. Office of Air Quality Planning and Standards.
- EPA. 1976. Draft Authorization to Discharge Under the National Pollutant Discharge Elimination System. Permit. July 23, 1976.
- EPA. 1974. Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. EPA 550/9-74-004. Office of Noise Abatement and Control, Washington, D.C.
- Farquhar, F.P. 1965. History of the Sierra Nevada. University of California Press, Berkeley.
- FEMA (Federal Emergency Management Agency). 1989. Flood Insurance Rate Map, Sacramento county, California. Department of Public Works, Sacramento County, Sacramento, California.
- Hart, E.W. 1988. Fault-Rupture Hazard Zones in California, California Division of Mines and Geology Special Publication 42, 24p.
- Hart, E.W. 1981. Recently Active Strands of the Greenville fault, Alameda, Contra Costa, and Santa Clara Counties, California; California Division of Mines and Geology Open-File Report 141 (unpublished).
- Harwood, D.S. and E.J. Helley. 1987. Late Cenozoic Tectonism of the Sacramento Valley, California; U.S. Geological Survey Professional Paper 1359, 45p. p11.

- Higginbotham and Associates. 1987. Master Plan Report, Sacramento Army Depot, Sacramento, California, April 1, 1987 in *Willdan Assoc.* 1993.
- Higginbotham and Associates. 1985. Mobilization Master Plan Volume I: Mobilization Master Plan Report, Sacramento Army Depot, Sacramento, California. Prepared for U.S. Army Corps of Engineers, Sacramento District.
- Hughes, R.E. 1986. Diachronic variability in obsidian procurement patterns in northeastern California and southcentral Oregon. University of California Publications in Anthropology 17.
- Hygienetics, Inc. 1989. Asbestos Investigation Survey of the Sacramento Army Depot, 1989.
- International Conference of Building Officials (ICBO). 1991. Uniform Building code 1991 Edition: ICBO, Whittier, California.
- Jacobs Engineering. 1989. TES IV. RCRA Compliance Evaluation Inspection. May 1989.
- James M. Montgomery Consulting Engineers, Inc. 1987. PCB Transformer Compliance Study. Sacramento Army Depot. Sacramento, California.
- Jennings, C.W. 1992. Preliminary Fault Activity Map of California. California Geology, California Division of Mines and Geology, v. 26, No. 2, pp. 32-36.
- K.D. Anderson. 1993. Transportation Engineers Report, Circulation Element, Existing setting and Initial Constraints Analysis, Sacramento Army Depot Site Planning and Environmental Assessment, February 15, 1993.
- Kleinfelder. 1992. Annual groundwater sampling report 1991 Sacramento Army Depot. Report prepared for Department of the Army Sacramento District. June 19. 3 volumes.
- Kleinfelder. 1991. Wetland Delineation, Sacramento Army Depot. Sacramento, California.
- Kleinfelder. 1991. RI/FS Work Plan. Sacramento Army Depot. June 28.
- Kleinfelder. 1990. RCRA Facilities Assessment Sampling Visit Report. December 17.
- Kleinfelder. 1989. Public Health Evaluation of Sacramento Army Depot, Phase II, OUFS Groundwater Treatment System. April 5.
- Levy, R. 1978. Eastern Miwok. In Handbook of North American Indians. Volume 8: California, (R.F. Heizer, ed.) pp. 398-413. Smithsonian Institution, Washington, D.C.
- McGowan, J. 1967. The Sacramento Valley: A student's guide to localized history. Teachers College Press, New York.

- Meehan, J.F. 1973. Earthquakes and faults affecting Sacramento. California Geology, California Division of Mines and Geology, v 26, No. 2, pp. 32-36.
- Moratto, M.J. 1984. California archaeology. Academic Press, New York.
- Mualchin, L., and A.L. Jones. 1992. Peak Acceleration from Maximum Credible Earthquakes in California (Rock and Stiff Soil Sites). California Division of Mines and Geology Open-File Report 92-1, 53 p., 1 pl.
- Nolte and Associates. 1989. Vehicle Emissions Study. Sacramento Army Depot, May 1989.
- Pan Am Services. 1983. Sacramento Army Depot, Emergency Expansion Capability Plan, Step 1, Utility Analysis in *Willdan Assoc.* 1993.
- Reeder, J.R. 1982. Systematics of the Tribe Orcuttieae (Gramineae) and the Description of a New Segregate Genus, *Tuctoria*. Amer. J. Bot. 69(7)L 1082-1095.
- Remsen, J.V., Jr. 1978. Bird species of special concern in California. Nongame Wildlife Investigations, California Fish and Game Wildlife Management Branch Administrative Report No. 78-1. 54 pages.
- Roy F. Weston, Inc. 1990. Task Order II Enhanced Preliminary Assessment for Sacramento Army Depot. Sacramento Army Depot, Sacramento, California.
- Sacramento County. 1992. Draft Safety Element of the County of Sacramento General Plan. County of Sacramento Planning and Community Development Department General and Advance Planning Section, August 11, 1992.
- Sacramento County. 1990. Final Public Review Draft Safety Element of the County of Sacramento General Plan. County of Sacramento Planning and Community Development Department General and Advance Planning Section; dated November 1990.
- Sacramento County. 1985. General Plan. Amended April 1985. Summary of Zoning Classifications.
- Sacramento Area Council of Governments. 1993. Data Summaries, Volume 23, Number 8. Sacramento Area Council of Governments, Sacramento, CA.
- Sacramento Area Council of Governments. 1990. Regional Air Quality Plan. Sacramento, CA. Sacramento Area Council of Governments.
- Seed, H.B. and I.M. Idriss. 1982. Ground Motions and Soil Liquefaction during Earthquakes. Earthquake Engineering Research Institute: Berkeley, California.

- Seed, H.B., K. Tokimatsu, L.F. Harder, and R.M. Chung. 1985. Influence of SPT Procedure in Soil Liquefaction Resistance Evaluations. *J. Geotech. Eng. Div., ASCE*, v. 111, No. 12, pp. 1425–1455.
- Slemmons, D.B. 1980. Design Earthquake Magnitudes for the Western Great Basin, In: R.E. Anderson, A. Ryall, R.A. Smith organizers, *Proceedings of Conference X Earthquake Hazards along the Wasatch Sierra-Nevada Frontal Fault Zones*, pp. 62–85.
- SMAQMD (Sacramento Metropolitan Air Quality Management District). 1991. *Sacramento 1991 Air Quality Attainment Plan, Volumes I-VII*. Sacramento Metropolitan Air Quality Management District, Sacramento, CA.
- State of California. 1990. *Annual Planning Information, Sacramento Metropolitan Statistical Area*. Employment Development Department, Sacramento, California, June 1990.
- State of California. 1989. *Annual Planning Information. Sacramento Metropolitan Statistical Area*. Prepared by the Employment Development Department, Sacramento, California. June 1989.
- Supernowicz, D. 1983. *Historical overview of the Eldorado National Forest*. M.A. thesis, Department of History, California State University, Sacramento.
- Toppozada, T.R. 1987. Magnitude Comparison 1892 Vacaville-Winters Earthquake and 1983 Coalinga Earthquake; *California Geology*, v. 40, No. 4, p. 84.
- Toppozada, T.R. 1981. *Preparation of Isoseismal Maps and Summaries of Reported Effects for Pre-1990 California Earthquakes*; California Division of Mines and Geology Open-File Report 81-11, 182p., 2 plates.
- U.S. Army Center for Health Promotion and Preventive Medicine—Provisional (USACHPPM). 1995. *Industrial Radiation survey No. 27-43-0991C-95 Facility Close-out and Termination Survey*. Sacramento Army Depot. September 15 to December 30, 1994.
- U.S. Army Materiel Command. 1993. *Draft Environmental Impact Statement, Sacramento Army Depot Disposal and Reuse*. November, 1993.
- U.S. Census Bureau. 1993. *Computer model. Environmental Technical Information System, Economic Impact Forecasting System*. ACOE.
- U.S. Department of Commerce. 1991. *Table CA25, Regional Economic Information System CD-ROM, Regional Economic Measurement Division, Bureau of Economic Analysis, Economic and Statistics Administration, May 2, 1991*.

- USAEC (U.S. Army Environmental Center). 1994. Final Community Environmental Response Facilitation Act (CERFA) Report. Sacramento Army Depot. Prepared by Arthur D. Little, Inc., April 1994.
- USATHAMA (U.S. Army Toxic and Hazardous Materials Agency). 1979. Installation Assessment of Sacramento Army Depot, Report No. 146. December, 1979.
- USDA (U.S. Department of Agriculture). 1990. Draft Map and Preliminary Reports, Soil Survey, Sacramento County.
- USDA. 1985. Preliminary Report, Soil Survey, Sacramento County. November 1985.
- USGS (United States Geological Survey). 1990. Probabilities of Large Earthquakes in the San Francisco Bay Region, California; prepared by the Working Group on California Earthquake Probabilities. USGS Circular 1053: U.S. Government Printing Office: Washington, D.C., 51p.
- Wagner, D.L., E.J. Bortugno, and R.D. McJunkin. 1990. Geologic Map of the San Francisco-San Jose Quadrangle; California Division of Mines and Geology Regional Geologic Map Series No. 5A., 1:250,000.
- Willdan Associates. 1993. Sacramento Army Depot Reuse Study Preliminary Existing Infrastructure Report, Prepared for City of Sacramento, April 19, 1993.
- Willig, J.A. 1988. Paleo-Archaic adaptations and lakeside settlement patterns in the Northern Alkali Basin, Oregon. In Early human occupation in far western North America: the Clovis-Archaic interface, edited by J.A. Willig, C.M. Aikens, and J.L. Fagan, pp. 417-482. Nevada State Museum Anthropological Papers 21.
- Wilson, N. and A. Towne. 1978. Nisenan. In Handbook of North American Indians. Volume 8: California, edited by R.F. Heizer, pp. 389-387. Smithsonian Institution, Washington, D.C.
- Wirth Environmental Services. 1983. An archaeological overview and management plan for the Sacramento Army Depot, Sacramento, California. Prepared for the National Park Service, U.S. Department of the Interior, San Francisco.

For further document references, see Table 3-1, "Previous Investigations at Sacramento Army Depot," and Appendix B, "Installation Environmental Restoration Documents Summary Tables."

Appendix A

Fiscal Year Requirements/Costs

Table A-1 Historical Environmental Program Expenditures Summary	FY 1986 – FY 1991
Table A-2. Current Environmental (BRAC) Project Expenditures and Estimated Summary	FY 1992 – FY 1997
Table A-3. Outyear Environmental Project Summary	FY 1998 – FY 2001
Table A-4. Total Environmental Project Summary	FY 1986 – FY 2001

Table A-1
Historical Environmental Program Expenditures Summary (Cleanup)
Fiscal Year 1986 to 1991

	Fund Requirements (\$000)						
Program	FY 1986	FY 1987	FY 1988	FY 1989	FY 1990	FY 1991	Total
IRP DERA	\$0	\$0	\$0	\$3,450	\$2,872	\$13,373	\$19,695
IRP DBOF	\$850	\$1,265	\$2,755	\$0	\$0	\$0	\$4,870
Environmental Compliance	\$250	\$300	\$400	\$815	\$921	\$775	\$3,461
Natural/Cultural	\$0	\$0	\$0	\$50	\$100	\$150	\$300
Total	\$1,100	\$1,565	\$3,155	\$4,315	\$3,893	\$14,298	\$28,326

Table A-2
Current Environmental (BRAC) Expenditures and Estimated Summary
Fiscal Year 1992 to 1997

	Fund Requirements (\$000)						
Program	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	Total
IRP DERA	\$754	\$0	\$0	\$0	\$0	\$0	\$754
IRP BRAC	\$6,460	\$16,007	\$8,829	\$4,677	\$2,217	\$1,691	\$39,881
Environmental Compliance BRAC	\$0	\$2,050	\$2,115	\$1,825	\$137	\$24	\$6,151
Environmental Compliance	\$1,150	\$2,064	\$1,302	\$1,362	\$0	\$0	\$5,878
Natural/Cultural	\$89	\$10	\$5	\$10	\$0	\$0	\$114
Total	\$8,453	\$20,131	\$12,251	\$7,874	\$2,354	\$1,715	\$52,778

Table A-3
Outyear Environmental Project Summary
Fiscal Year 1998 to 2001

Fund in \$000					
Project	FY 1998	FY 1999	FY 2000	FY 2001	Total
IRP DERA	\$1,167	\$1,168	\$1,296	\$1,590	\$5,221

Table A-4
Total Environmental Project Summary
Fiscal Year 1986 to 2001

Fund in \$000	
Fiscal Years 1986–1991	\$28,326
Fiscal Years 1992–1997	\$52,778
Fiscal Years 1998–2001	\$5,221
Total	\$86,325

Appendix B

Installation Environmental Restoration Documents Summary Tables

Table B-1 Project Deliverables

Table B-2 Site Deliverables

Table B-3 Technical Documents/Data Loading Status Summary

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1985	Sample Collection Protocol and Quality Assurance Procedures Groundwater and Soil Sampling	SW-1	Sitewide	November 25, 1985
1986	Soil Sampling Plan	SW-2	Sitewide	July 8, 1986
1986	Report of Soil Sampling Activities	SW-3	Sitewide	October 2, 1986
1986	Health & Safety Plan, Additional Soil Investigation	SW-4	Sitewide	December 8, 1986
1986	IRP Phase II, Soil Sampling Plan for Additional Areas of Investigation	SW-5	Sitewide	December 9, 1986
1987	Phase II IRP Results of Sampling in Additional Areas of Investigation	SW-6	Sitewide	June 10, 1987
1987	Supplement Health & Safety Plan, Soil Gas Survey	SW-7	Sitewide	September 25, 1987
1987	Site Safety Plan for Assessment of Off-site Groundwater Conditions	SW-8	Sitewide	October 29, 1987
1987	Phase II IRP Soil and Groundwater Assessment	SW-9 A, B, C	Sitewide	December 10, 1987
1988	Technical Memorandum, Summary of Existing Data	SW-10 A, B, C, D	Sitewide	April 22, 1988
1989	Technical Memorandum, Site Description	SW-11	Sitewide	February 28, 1989
1990	Aerial Photographic Analysis	SW-12 A, B, C	Sitewide	February 1990
1990	Health & Safety Plan, RFA Sites	SW-13	RFA - Sitewide	June 20, 1990
1990	Soil Gas Sampling Plan, 3 RFA Sites	SW-14	RFA - Sitewide	November 13, 1990
1991	RCRA Facilities Assessment Sampling Visit Assessment	SW-15	RFA - Sitewide	December 17, 1990
1991	Infrared Survey, Sacramento Army Depot	SW-16	Sitewide	April 4, 1991
1991	Quality Assurance Project Plan, Field Sampling Plan Sitewide	SW-17A	Sitewide	October 30, 1991
1991	Quality Assurance Project Plan, Remedial Investigation at Waste Management Units	SW-17B	Sitewide	May 7, 1992
1991	Soil Gas Investigation, Site 014B, 016B and 019B	SW-18	Sitewide	July 31, 1991
1991	Ecological Risk Assessment	SW-19	Sitewide	November 4, 1991
1991	Wetlands Delineation	SW-20	Sitewide	January 29, 1992
1992	RFA Sampling Plan	SW-21	Sitewide	February 5, 1992
1991	Morrison Creek Sediment Transport Study	SW-22	Sitewide	February 5, 1992

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1992	RFA Sampling Plan 2 IR Sites, Contractor Spoils Area and Railyard Engine Shed	SW-23	Sitewide	May 18, 1992
1992	Community Relations Plan, Sacramento Army Depot	SW-24	Sitewide	August 18, 1992
1992	Additional RFA Investigation, Railyard Engine Shed, Contractor Spoils Area, Area South of Kwajalein, and Buildings 651 and 653	SW-25	Sitewide	October 27, 1992
1991/92	1991/1992 Annual Update Report	SW-26	Sitewide	March 1, 1993
1994	Sitewide Remedial Investigation Report	SW-27	Sitewide	June 1994
1994	Sitewide Feasibility Study Report	SW-28	Sitewide	July 1994
1994	Sitewide Health Risk Assessment	SW-29	Sitewide	July 1994
1994	Sitewide Proposed Action Plan	SW-30	Sitewide	August 1994
1994	Superfund Record of Decision, Basewide	SW-31	Sitewide	October 1994
1994	Additional RFA Investigation Report, Site 014B Possible Shallow Lagoon, 016B Paint Residue & Waste Oil Dump, 019 Fill Area	SW-32	Sitewide	January 29, 1992
1994	CERFA - Draft	SW-33	Sitewide	April 1, 1994
1994	Recommended Soil Remediation Goals - Sitewide Source Area Containing Chlorinated Volatile Organics	SW-34	Sitewide	May 25, 1994
1988	Federal Facility Agreement under CERCLA Section 120, Between the U.S. EPA, the State and U.S. Army	SW-35	Sitewide	December 1988
1995	Contractor Spoils Area; Addendum to RFA Investigation	SW-37	Contractor Spoils	April 5, 1995
1995	UST/EBS Sites, Cyanide/Acid Sumps and Cyanide Leach Field	SW-38	UST/EBS Sites	March 3, 1995
1995	Appendix C of Installation Workplan; Horizontal Extraction Wells EW-12 and EW-13	SW-39	Sitewide	May 19, 1995
1993	Freon 113, Field Investigation Workplan	FR-1	Freon Site	September 8, 1993
1993	Health & Safety Plan, Remedial Investigation Freon 113	FR-2	Freon Site	September 17, 1993
1994	Technical Memoranda on Field Activities Appendix A-6, RI Report - Freon 113	FR-3	Freon Site	January 27, 1994
1994	Health & Safety Plan Freon 113 Air Sparging Pilot Test	FR-4	Freon Site	April 13, 1994

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1994	Freon Spill Area - Air Sparging Pilot Test Workplan	FR-5	Freon Site	May 20, 1994
1994	Weekly Reports - Freon Spill Site Workplan	FR-6	Freon Site	June 1994
1995	Freon Pilot Test; Final Report	FR-7	Freon Site	April 7, 1995
1988	Summary of Existing Data - Tank 2	T2-1	Tank 2	December 1988
1989	Tank 2 Quality Assurance Project Plan and Field Sampling Plan, Appendix A1 and B1 of Sitewide	SW-17A	Tank 2	October 30, 1991
1989	Health & Safety, Tank 2 Operable Unit	T2-2	Tank 2	September 27, 1989
1990	Treatability Study Workplan, Tank 2 Operable Unit	T2-3	Tank 2	August 2, 1990
1991	Tank 2 Human Health Evaluation of Remedial Alternatives for Tank 2, Appendix F of OUFS, Volume 1 of 3	T2-4A	Tank 2	May 9, 1991
1991	Tank 2 OUFS Volumes 1 through 3	T2-4A	Tank 2	August 5, 1991
1991	Tank 2 Baseline Health Risk Assessment, Appendix C of OUFS, Volume 2 of 3	T2-4B	Tank 2	August 12, 1991
1991	Tank 2 Treatability Test Report, Appendix E of OUFS Volume 3 of 3	T2-4C	Tank 2	July 19, 1991
1991	Site Proposed Action Plan, Sacramento Army Depot, Tank 2 Area	T2-5	Tank 2	August 1991
1991	Superfund Record of Decision, Sacramento Army Depot, Tank 2 Operable Unit	T2-6	Tank 2	October 2, 1991
1991	Tank 2 Operable Unit Technical Memo. Field Activities Appendix A-1, Parts 1 & 2 of Sitewide RI Report	T2-7	Tank 2	October 25, 1991
1993	Title II Services Summary Report, Tank 2 Site Sacramento Army Depot	T2-8	Tank 2	April 14, 1993
1993	Tank 2 Remedial Action Report	T2-9	Tank 2	June 29, 1993
1990	Tank 2 Technical Memorandum, Summary of Existing Information - Appendix B-1	T2-10	Tank 2	July 19, 1990
1994	Tank 2 Operable Unit Remedial Action Report	T2-11	Tank 2	June 21, 1994
1987	Workplan for a Hydrogeologic Assessment Report for the SAAD Oxidation Lagoons	OL-1	Oxidation Lagoons	November 27, 1987
1990	Oxidation Lagoons Quality Assurance Project Plan & Field Sampling Plan, Appendix A2 & B2 of Sitewide	SW-17A	Oxidation Lagoons	February 27, 1990

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1990	Health & Safety Plan, Oxidation Lagoons, Operable Unit	OL-2	Oxidation Lagoons	March 1, 1990
1990	Treatability Study Workplan Oxidation Lagoons OU	OL-3	Oxidation Lagoons	August 2, 1990
1992	OU Feasibility Study, Oxidation Lagoons Volume 1 of 3	OL-4A	Oxidation Lagoons	March 13, 1992
1991	Human Health Evaluation of Remedial Alternatives for Oxidation Lagoons, Appendix F of OUFS, Vol 1	OL-4A	Oxidation Lagoons	May 9, 1991
1991	Public Health Evaluation, Oxidation Lagoons Appendix C of OUFS, Volume 2 of 3	OL-4B	Oxidation Lagoons	July 23, 1991 Rev. 3/92
1991	Treatability Study and Add. Treatability Testing Oxidation Lagoons, Appendix G of OUFS, Vol. 3 of 3	OL-4C	Oxidation Lagoons	July 17, 1991 Rev. 3/92
1991	Site Proposed Action Plan, Sacramento Army Depot Oxidation Lagoons	OL-5	Oxidation Lagoons	August 1991
1992	Oxidation Lagoons Operable Unit Technical Memo, of Field Activities, Appendix A-2, Part 1 of 1 of RI Report	OL-6	Oxidation Lagoons	June 30, 1992
1992	Superfund Record of Decision, Sacramento Army Depot, Oxidation Lagoons Operable Unit	OL-7	Oxidation Lagoons	September 15, 1992
1990	Technical Memorandum, Summary of Existing Data Oxidation Lagoons - Drainage Ditches, Old Morrison	OL-8	Oxidation Lagoons	June 20, 1990
1990	Burn Pits Quality Assurance Project Plan and Field Sampling Plan, Appendix A3 and B3 of Sitewide	SW-17A	Burn Pits	October 30, 1991
1991	Burn Pits OU Treatability Study Workplan	BP-1	Burn Pits	November 24, 1991
1991	Burn Pits Operable Unit Technical Memorandum, of Field Activities, Appendix A-3, Parts 1-3 of Sitewide RI	BP-2	Burn Pits	October 28, 1991
1992	Burn Pits Treatability Test Report, Appendix G of OUFS, Volume 3 of 3	BP-3C	Burn Pits	June 12, 1992
1992	Burn Pits Baseline Health Risk Assessment, Appendix C of OUFS, Volume 2 of 3	BP-3B	Burn Pits	June 12, 1992
1992	Burn Pits OU Feasibility Study Volume 1 of 3	BP-3A	Burn Pits	March 30, 1993
1992	Site Proposed Action Plan, Sacramento Army Depot Burn Pits Operable Unit	BP-4	Burn Pits	June 12, 1992

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1992	Addendum Report to Technical Memorandum, on Field Activities, Burn Pits Operable Unit	BP-5	Burn Pits	July 17, 1992
1992	Technical Memorandum, Summary of Existing Information, Burn Pits	BP-6 A, B, C & D	Burn Pits	August 6, 1992
1992/93	Superfund Record of Decision, Sacramento Army Depot, Burn Pits Operable Unit	BP-7	Burn Pits	February 25, 1993
1990	Technical Memorandum, Summary of Available Information, Burn Pits, Appendix B-3	BP-8	Burn Pits	June 20, 1990
1994	Burn Pits Title II Services; Sampling Results - SEAMIST Wells	BP-9	Burn Pits	October 11, 1994
1993	Well Construction Report, Parking Lot 3, Well Cluster	P3-1	Parking Lot 3	February 26, 1993
1993	Air Sparging Pilot Test Workplan, Parking Lot 3	P3-2	Parking Lot 3	May 5, 1993
1993	Health & Safety Plan, Air Sparging Pilot Test, Parking Lot 3	P3-3	Parking Lot 3	May 10, 1993
1993	Design Supplement to Pilot Test Workplan, Parking Lot 3, Air Sparging	P3-4	Parking Lot 3	June 4, 1993
1993	Parking Lot 3, Air Sparging Interim Final Treatability Study Workplan	P3-5	Parking Lot 3	July 8, 1993
1994	Parking Lot 3, Air Sparging Pilot Test Draft Final Report	P3-6	Parking Lot 3	January 28, 1994
1994	Parking Lot 3, Air Sparging Pilot Test Draft Final Report	P3-6	Parking Lot 3	August 8, 1994
1993	Operation & Maintenance Manual, Air Sparging System	P3-7	Parking Lot 3	August 12, 1993
1994	Weekly Status Reports - Air Sparging	P3-8	Parking Lot 3	
1994	Verification Soil Sampling - Draft QA Project Plan	P3-9	Parking Lot 3	April 6, 1994
1994	Soil Remediation Closure Report Parking Lot 3	P3-10	Parking Lot 3	June 10, 1994
1994	Soil Remediation Closure Report Parking Lot 3	P3-10	Parking Lot 3	July 7, 1995
1994	Parking Lot 3, Soil Venting/Dual Phase Extraction Pilot Test Work Plan	P3-11	Parking Lot 3	July 17, 1995
1994	Health & Safety Plan, Soil Venting/High Vapor Extraction System	P3-12	Parking Lot 3	August 23, 1994

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1990	Health & Safety Plan, Remedial Investigation, Firefighting Training Area	RI-1	RI/FS Sites	August 2, 1990
1990	Technical Memorandum, Summary of Existing Data, Pesticide Mix Area, and Battery Disposal Well	RI-2	RI/FS Sites	August 6, 1990
1990	RI/FS Workplan, HAR and SWAT Requirements	RI-3	RI/FS Sites	September 15, 1992
1991	Technical Memorandum of Field Activities, App. A-4, Parts 1-4 of Sitewide RI Report, PMA, FTA, B.300, BDW	RI-4 A, B, C & D	RI/FS Sites	October 28, 1991
1992	Health & Safety Plan, Remedial Investigation Building 300, Burn Pits	RI-5	RI/FS Sites	March 17, 1992
1992	Quality Assurance Project Plan & Field Sampling Plan, RI/FS sites, PMA, FTA, B.300, BDW	SW-17B	RI/FS Sites	May 7, 1992
1992	Health Risk Assessment for the Pesticide Mix Area and the Battery Disposal Well	RI-6	RI/FS Sites	November 16, 1992
1992	Health & Safety Plan, Remedial Investigation, Battery Disposal Well	RI-7	RI/FS Sites	September 24, 1992
1992	Health & Safety Plan, Remedial Investigation, Pesticide Mix Area	RI-8	RI/FS Sites	December 3, 1992
1993	Health Risk Assessment for Building 300	RI-9	RI/FS Sites	April 19, 1993
1993	Pesticide Mix Area and Battery Disposal Well Excavation Activities Results	RI-10	RI/FS Sites	July 7, 1993
1994	RI/FS Addendum; Pesticide Mix Area and Firefighter Training	RI-11	RI/FS Sites	August 8, 1994
1994	Report of findings; Building 555, Drilling	RI-12	Building 555	August 29, 1994
1994	Building 372 Investigation; Field Sampling Plan	RI-14	Building 372	November 30, 1994
1995	Railyard Engine Shed; Field Bioventing Pilot Testing	RI-15	Railyard Engine	July 7, 1995
1995	Building 300 Underground Drain system; Draft Technical Memorandum on Field Activities	RI-16	Building 300	July 17, 1995
1985	Health & Safety Plan	WC-1	Well Installation Sitewide	October 15, 1985
1985	Health & Safety Plan - Task 1A "Deep" Well Installation Groundwater Sampling	WC-2	Well Installation Sitewide	October 31, 1985

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1986	Supplement to Health & Safety Plan Task 1C - Well Installation in N.W. Corner of Depot	WC-3	Well Installation Sitewide	November 7, 1986
1986	Installation Restoration Program, Phase II Well Completion Report	WC-4	Well Installation Sitewide	November 7, 1986
1988	Addendum to Well Construction Report, On-site Wells MW-22 through MW-26	WC-5	Well Installation Sitewide	February 10, 1988
1988	Well Closure Report	WC-6	Well Installation Sitewide	February 23, 1988
1988	Addendum to Well Construction Report, Off-site Wells MW-1001 through MW-1012	WC-7	Well Installation Sitewide	May 31, 1988
1988	Addendum to Well Construction Report, Off-site Wells MW-1013 through MW-1016	WC-8	Well Installation Sitewide	October 18, 1988
1989	Addendum to Well Construction Report, Off-site Wells MW-1017 through MW-1020	WC-9	Well Installation Sitewide	March 17, 1989
1989	Addendum to Well Construction Report, On-site Wells MW-27 through MW-50	WC-10	Well Installation Sitewide	May 30, 1989
1990	Addendum to Well Construction Report, Off-site Wells MW-1021 through MW-1024	WC-11	Well Installation Sitewide	January 15, 1990
1990	Addendum to Well Construction Report, On-site Wells MW-52 through MW-53	WC-12	Well Installation Sitewide	June 6, 1990
1991	Addendum to Well Construction Report, On-site Wells MW-54 through MW-65	WC-13	Well Installation Sitewide	March 26, 1991
1991	Well Construction Report	WC-14	Well Installation Sitewide	September 13, 1991
1992	Addendum to Well Construction Report, On-site Wells MW-65 through MW-69	WC-15	Well Installation Sitewide	April 4, 1992

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1993	Addendum to Well Construction Report, On-site MW-74 & MW-75 & Extraction Wells EW-8 & EW-9	WC-16	Well Installation Sitewide	October 25, 1993
1994	Addendum to Well Construction Report, Off-site Wells MW-1025 through MW-1028	WC-17	Well Installation Sitewide	January 14, 1994
1994	Addendum to Well Construction Report, On-site Wells MW-5A, MW-6A and MW-76 through MW-79	WC-18	Well Installation Sitewide	January 14, 1994
1988	Groundwater Treatment Alternatives Assessment	GW-1	Groundwater Sitewide	May 31, 1988
1988	Workplan, Groundwater Treatment Process Testing and Evaluation	GW-2	Groundwater Sitewide	June 7, 1988
1988	Post Screening Evaluation & Preliminary Design of SADA Phase II OUFS GW Treatment System	GW-3	Groundwater Sitewide	July 18, 1988
1988	Groundwater Extraction System	GW-4	Groundwater Sitewide	August 10, 1988
1988	Final Design Analysis On-Post IRM Groundwater Extraction and Treatment	GW-5	Groundwater Sitewide	September 9, 1988
1989	Groundwater Sampling Results, First Quarter 1989	GW-6	Groundwater Sitewide	May 1989
1989	Groundwater Sampling Results, Second Quarter 1989	GW-7	Groundwater Sitewide	August 1989
1989	Public Health Evaluation of SAAD Phase II OUFS Groundwater Treatment System	GW-8	Groundwater Sitewide	April 1989
1989	Technical Memorandum, Data Analysis for Extraction Design	GW-9	Groundwater Sitewide	April 21, 1989
1989	On-site Groundwater Operable Unit Feasibility	GW-10	Groundwater Sitewide	May 19, 1989
1989	Proposed Plan for On-site Groundwater Remediation	GW-11	Groundwater Sitewide	June 16, 1989
1989	Groundwater Sampling Results, Summer 1989	GW-12 A, B	Groundwater Sitewide	November 1989
1989	Record of Decision for On-site Groundwater Remediation at the Sacramento Army Depot	GW-13	Groundwater Sitewide	September 28, 1989
1989	Groundwater Sampling Results, Fall 1989	GW-14 A, B	Groundwater Sitewide	February 1990

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1989	Construction Completion Report, SAAD Ground Water Extraction and Treatment System	GW-15	Groundwater Sitewide	December 18, 1989
1989	After Action Testing Report SAAD Groundwater Extraction and Treatment System	GW-16	Groundwater Sitewide	December 22, 1989
1990	Groundwater Sampling Results, Winter 1990	GW-17 A, B	Groundwater Sitewide	April 4, 1990
1990	Groundwater Sampling Results, Spring 1990	GW-18 A, B	Groundwater Sitewide	July 10, 1990
1990	Groundwater Sampling Results, Summer 1990	GW-19 A, B	Groundwater Sitewide	November 1990
1990	Groundwater Quality Assurance Project Plan	GW-20	Groundwater Sitewide	July 18, 1990
1990	Groundwater Sampling Results, Fall 1990	GW-21	Groundwater Sitewide	January 10, 1991
1991	Groundwater Sampling Results, Winter 1991	GW-22	Groundwater Sitewide	April 4, 1991
1991	Groundwater Extraction and Treatment System Troubleshooting	GW-23	Groundwater Sitewide	March 26, 1991
1991	Groundwater Sampling Results, Spring 1991	GW-24	Groundwater Sitewide	August 30, 1991
1991	Groundwater Extraction and Treatment System Water Reuse Assessment	GW-25	Groundwater Sitewide	June 5, 1991
1991	Groundwater Sampling Results, Summer 1991	GW-26	Groundwater Sitewide	December 10, 1991
1991	Groundwater Sampling Results, Annual Report Fall 1991	GW-27 A, B, & C	Groundwater Sitewide	June 19, 1992
1992	Groundwater Sampling Results, Winter 1992	GW-28	Groundwater Sitewide	June 18, 1992
1992	Groundwater Sampling Results, Spring 1992	GW-29	Groundwater Sitewide	October 30, 1992
1992	Groundwater Sampling Results, Summer 1992	GW-30	Groundwater Sitewide	December 30, 1992
1992	Groundwater Sampling Results, Fall 1992	GW-31	Groundwater Sitewide	April 27, 1993
1992	Preliminary Environmental Site Assessment	GW-32	Groundwater Sitewide	October 13, 1992
1992	Groundwater Monitoring Plan at the Sacramento Army Depot	GW-33	Groundwater Sitewide	November 24, 1992

Table B-1A. Project Deliverables, Kleinfelder

Year	Project Title	Report #	Sites Examined	Deliverable Date
1993	Groundwater Sampling Results, Winter 1993	GW-34	Groundwater Sitewide	April 27, 1993
1993	Groundwater Sampling Results, Spring 1993	GW-35	Groundwater Sitewide	October 22, 1993
1992	Groundwater Monitoring Plan at the Sacramento Army Depot	GW-36	Groundwater Sitewide	November 24, 1992
1993	South Post Groundwater Treatment System Performance Evaluation	GW-37	Groundwater Sitewide	June 16, 1993
1993	South Post Groundwater Treatment System Upgrades	GW-38	Groundwater Sitewide	June 29, 1993
1994	Groundwater Flow/Chemical Transport Modeling Remedial Simulation Results	GW-39	Groundwater Sitewide	May 2, 1994
1993	Groundwater Sampling Results, Summer 1993	GW-40	Groundwater Sitewide	January 31, 1994
1994	Quarterly Groundwater Sampling Results, Winter 1994	GW-41	Groundwater Sitewide	February 8, 1995
1995	Final Design Analysis	GW-42	Groundwater Sitewide	April 7, 1995

Table B-1B. Project Deliverables, Foster Wheeler Environmental Corporation

Year	Project Title	Report #	Sites Examined	Deliverable Date
1990	RCRA Part-B Permit Update	RCRA-001-003	Bldg. 412	February 14, 1990
1990	Industrial Waste Line Pressure Test	IWTP-001	IWTP	May 1990
1990	Design Quality Control Plan	ESF-001-015	N/A	June 18, 1990
1990	Decontamination Facilities Study Plan	PHF-001-001	Bldg. 348	July 5, 1990
1990	Solvent Recycling Facility Study Plan	Solvnt-001-001		August 7, 1990
1991	Hazardous Waste Minimization Study	HMIN-001-001	Sitewide	November 1991
1992	Hazard Screening & Preliminary Consequence Analysis Study	RMPP-001-009	Sitewide	December 12, 1992
1991	Source Reduction Evaluation Review and Plan (SB-14)	ESF-SB14-001	Sitewide	April 1992
1992/ 1993	Source Reduction Evaluation Review and Plan (SB-14) -- Update	SB14-001-001	Sitewide	October 21, 1993

Table B-1B. Project Deliverables, Foster Wheeler Environmental Corporation

Year	Project Title	Report #	Sites Examined	Deliverable Date
1990	Design Documents for the Removal of Six Underground Storage Tanks	UST-001-001	UST Nos. 200-3, 200-4, 300-9, 600-1, 600-2, UK	November 16, 1990
1991	Design Documents for the Removal of Bunker Fuel Tanks	UST/B-001-001	EBS Study Ares 39 & 40	August 23, 1991
1994	Design Documents for the Removal of USTs and Sumps	UST/3-001-001	Bldgs. 250, 699 & 300	June 17, 1994
1990	Air Toxic Hot Spots Emission Inventory Plan (EIP)	ATHS-111-003	Sitewide	May 3, 1990
1989	ATHS Emission Inventory Report	ATHS-111-071	Sitewide	July 29, 1991
1991	ATHS Emission Inventory Report	ATHS-111-082	Sitewide	May 31, 1992
1992	ATHS Health Risk Assessment Protocol	ATHS/RA-001-003	Sitewide	January 22, 1992
1992	NOx Control Study	NOx-111-005	Sitewide	March 3, 1992
1993	Clean Air Act Compliance Plan	CAA-111-008	Sitewide	March 19, 1993
1995	Emission Reduction Credit Application	ATHS-111-092	Sitewide	March 2, 1995
1992	Transportation Management Plan	TMP-125-010	Sitewide	April 3, 1992
1993	Benicia Army Cemetery Historic Resources Management Plan	HRMP-121-005	Benicia	January 12, 1993
1993	Natural Resources Management Plan	NRMP-001-007	Sitewide	October 29, 1993
1994	Biological Data Report for Vernal Pool Fairy Shrimp (Draft)	BDR-001-003	Sitewide	August 1994
1994	Biological Assessment for Vernal Pool Fairy Shrimp	BA-001-005	Sitewide	November 11, 1994
1990	Base Closure Environmental Impact Statement (EIS)--Prelim. Draft	EIS-001-032	Sitewide	November 20, 1990
1993	Environmental Assessment for Outgranting & FNSI	EA-001-009	Sitewide	July 16, 1993
1994	Environmental Assessment for Additional Groundwater Extraction Wells	EA-001-015	South Post	September 22, 1994

Table B-1B. Project Deliverables, Foster Wheeler Environmental Corporation

Year	Project Title	Report #	Sites Examined	Deliverable Date
1994	Sacramento Army Depot Disposal and Reuse Final Environmental Impact Statement (FEIS)	DAR-001-074	Sitewide	October 1994
1995	SAAD Disposal and Reuse EIS Record of Decision (ROD)	DAR-001-214	Sitewide	January 13, 1995
1993	Environmental Planning Guide (EPG)	EPG-001-004	Sitewide	February 1993
1994	Leasing Execution Plan, Version 1	EBST-PM-037	Sitewide	January 14, 1994
1994	Leasing Execution Plan, Version 2	EBST-PM-103	Sitewide	October 13, 1994
1994	BRAC Cleanup Plan (BCP), Version 1	BRAC-001-002	Sitewide	March 9, 1994
1994	Finding of Suitability to Lease (FOSL) Calif. Emergency Foodlink, License	EBST-PM-XXX	Bldgs. 247 & 255, Bays 5&6	March 28, 1994
1994	FOSL, U.S. District Court, Permit	EBST-PM-XXX	Bldg. 257, Bay 2	April 11, 1994
1994	FOSL, Operation Santa Claus, License	EBST-PM-XXX	Bldg. 253, Bay 1	April 11, 1994
1994	FOSL, Florin Little League, License	EBST-PM-XXX	EBS Study Area 92	May 16, 1994
1994	FOSL, California Emergency Foodlink, License	EBST-PM-XXX	Bldg. 245	June 25, 1994
1994	FOSL, City of Sacramento, License	EBST-PM-107	Bldg. 150	October 28, 1995
1994	FOSL, California Emergency Foodlink	EBST-PM-111	EBS Study Areas 21 & 22	November 1, 1994
1994	FOSL, Army Reserves Command (ARCOM)	EBST-PM-124	EBS Study Areas 8-9, 92-96	December 1994
1994	FOSL, Army Reserves Command (ARCOM)	EBST-PM-125	EBS Study Areas 30, 32, & 60	December 1994
1994	RCRA Closure Plan for Building 412	RCRA-001-007	Bldg. 412	November 29, 1994
1994	Health Risk Assessment of Bldg. 411	RCRA-001-008	Bldg. 411	December 5, 1994

Table B-1B. Project Deliverables, Foster Wheeler Environmental Corporation

Year	Project Title	Report #	Sites Examined	Deliverable Date
1994	Bldg. 300 Contaminated Drain System, Drain Pipe Removal & Contamination Assessment. Health & Safety Plan	UST/3-001-014	Bldg. 300	November 17, 1994
1994	Bldg. 300 Contaminated Drain System, Drain Pipe Removal & Contamination Assessment. Work Plan	UST/3-001-015	Bldg. 300	November 22, 1994
1994	Industrial Radiation Survey, Protocol No. 27-43-0991-94B, 09/15/94 to 12/30/94	RDM-001-001	Bldg 244, Rm. 1	December 23, 1994
1994	EBS/FOST Work Plan, Field Sampling & Analysis Plan, Health & Safety Plan, and Quality Assurance Project Plan	EBST-PM-148	Sitewide	December 1994
1994	FOST, Navy/Marine Corps	EBST-PM-123	Study Area 91	December 1994
1995	Cost Estimate to Upgrade Facilities at the Sacramento Army Depot	UPGRADE-001-017	Sitewide	January 1995
1995	Site 22 Final Summary Report Geophysical & Radiological Investigation	EBST-PM-158	Site 22	January 18, 1995
1995	Finding of Suitability to Transfer (FOST) to the City of Sacramento	EBST-PM-154	306 acres (most of the Depot)	February 6, 1995
1995	FOST to the U.S. Department of Health and Human Services	EBST-PM-153	Study Areas 14-16, 21 & 22	February 6, 1995
1995	CERCLA Section 120(h) Notice Table for City and HHS Transfers	EBST-PM-156	See above	February 22, 1995
1995	RCRA Closure Plan for the Hazardous Waste Container Storage Area	EBST-PM-159	Bldg. 412	March 1995
1995	Infrastructure Condition Survey & Summary Report	INFRA-001-016	Sitewide	April 17, 1995
1994 1995	Site-specific Environmental Baseline Surveys for Study Areas 1 through 98, 900 through 902	EBST-PM-XXX	Sitewide	1994 and 1995

Table B-2. Site Deliverables

Site ID	PA/SI	RD/RA	Close Out	IRA	LTM	NFRAP
Groundwater	GW-1	GW-3, GW-4, GW-9		GW-5, GW-15	SW-31	
Contractors Spoils Area	SW-23, SW-25					SW-27, SW-28, SW-29
Freon 113 Area	FR-1, FR-2				SW-31	
Parking Lot 3				P3-2	SW-31	
001	OL-4A, OL-6	P3-4, P3-5 OL-4C			OL-7	
002	BP-2, BP-3A BP-5, BP-6	BP-3A			BP-7	
003						SW-27, SW-28, SW-29
004						SW-27, SW-28, SW-29
005	T2-1, T2-4A T2-7	T2-4C	T2-8, T2-9		T2-6	
006	RI-4				SW-31	SW-27, SW-28, SW-29
007	RI-4				SW-31	
008	RI-2, RI-4			RI-10	SW-31	SW-27, SW-28, SW-29
009	RI-2, RI-4			RI-10	SW-31	SW-27, SW-28, SW-29
010	SW-15					SW-27, SW-28, SW-29
011	SW-15					SW-27, SW-28, SW-29

Table B-2. Site Deliverables

Site ID	PA/SI	RD/RA	Close Out	IRA	LTM	NFRAP
012	SW-15					SW-27, SW-28, SW-29
013	SW-15					SW-27, SW-28, SW-29
014	SW-15, SW-18					SW-27, SW-28, SW-29
015	SW-15					SW-27, SW-28, SW-29
016	SW-15, SW-18					SW-27, SW-28, SW-29
017	SW-15					SW-27, SW-28, SW-29
018	SW-15					SW-27, SW-28, SW-29
019	SW-15, SW-18					SW-27, SW-28, SW-29
020						SW-27, SW-28, SW-29
021	SW-15					SW-27, SW-28, SW-29

Table B-2. Site Deliverables

Site ID	PA/SI	RD/RA	Close Out	IRA	LTM	NFRAP
022						SW-27, SW-28, SW-29
023						SW-27, SW-28, SW-29
024						SW-27, SW-28, SW-29
025						SW-27, SW-28, SW-29
026						SW-27, SW-28, SW-29
027						SW-27, SW-28, SW-29
028	SW-23, SW-25					SW-27, SW-28, SW-29
029						SW-27, SW-28, SW-29
030						SW-27, SW-28, SW-29
031	SW-15					SW-27, SW-28, SW-29
032						SW-27, SW-28, SW-29

Table B-2. Site Deliverables

Site ID	PA/SI	RD/RA	Close Out	IRA	LTM	NFRAP
033						SW-27, SW-28, SW-29
034						SW-27, SW-28, SW-29
035						SW-27, SW-28, SW-29
036						SW-27, SW-28, SW-29
037						SW-27, SW-28, SW-29
038						SW-27, SW-28, SW-29
039						SW-27, SW-28, SW-29
040						SW-27, SW-28, SW-29
041						SW-27, SW-28, SW-29
042						SW-27, SW-28, SW-29
043						SW-27, SW-28, SW-29

Table B-2. Site Deliverables

Site ID	PA/SI	RD/RA	Close Out	IRA	LTM	NFRAP
044						SW-27, SW-28, SW-29
045						SW-27, SW-28, SW-29
046						SW-27, SW-28, SW-29
047						SW-27, SW-28, SW-29
048						SW-27, SW-28, SW-29
049						SW-27, SW-28, SW-29
050						SW-27, SW-28, SW-29
051						SW-27, SW-28, SW-29
052						SW-27, SW-28, SW-29
053						SW-27, SW-28, SW-29
054						SW-27, SW-28, SW-29

Table B-3. Technical Documents/Data Loading Status Summary

Date	IRP Title	Site/OU	Contractor	Service Center	IRPIMS Status/Other
	Data have been loaded as collected into a project database by the contractor. Database and reports are submitted to ACOE as generated.				

Appendix C

Decision Document Summaries/Community Involvement

Office of Historic Preservation Concurrence Letter

Native American Graves Protection and Repatriation Act Compliance Letter

U.S. Fish and Wildlife Service Biological Opinion Letter

U.S. Nuclear Regulatory Commission and Cal/EPA Radiation Clearance Letters

Cal/EPA EBS/FOST Clearance Letter

USEPA EBS/FOST Clearance Letter

Department of the Army Report of Availability for Leasing Letter

Ordnance and Explosive Waste Memo

Proposed Plan for On-Site Groundwater Remediation

Fact Sheet for Tank 2 (Decision Document Summary)

 Proposed Plan for Tank 2

Fact Sheet for Oxidation Lagoons (Decision Document Summary)

 Proposed Plan for Oxidation Lagoons

Fact Sheet for Burn Pits

 Proposed Plan for Burn Pits (Decision Document Summary)

Fact Sheet for RCRA-permitted Storage Facility

National Environmental Policy Act (NEPA)

 EA and EIS Notices

 Fact Sheet for EIS

 EIS Record of Decision

Fact Sheet Requesting Restoration Advisory Board Participation

Sacramento Army Depot IRP Brochure

Proposed Plan for Basewide Cleanup

Closing Ceremony Folder

Defense Environmental Restoration Program Nomination Form

Office of Historic Preservation Concurrence Letter

OFFICE OF HISTORIC PRESERVATION

DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 942898

SACRAMENTO 94298-0001

(916) 653-6624

FAX: (916) 653-9824



(916) 653-6624

FAX (916) 653-9824

September 17, 1993

COE930810A

John N. Reese, Colonel
Corps of Engineers
Department of the Army
U.S. Army Engineer District, Sacramento
1325 J Street
SACRAMENTO CA 95814-2922

Re: Closure and Realignment of Military Bases, Sacramento Army
Depot, Sacramento County.

Dear Col. Reese:

Thank you for submitting to our office your August 6, 1993 letter and supporting documentation regarding the closure and realignment of the Sacramento Army Depot, Sacramento County. The depot is scheduled for closure in 1995 and is in the process of evaluating its cultural and environmental resources for their potential use in realignment activity that will follow its closure. This evaluation has been conducted under the stipulations of a July 17, 1992 programmatic agreement executed between the Department of the Army, the Advisory Council on Historic Preservation, and the National Conference of Historic Preservation Officers.

The submitted evaluation report examined or identified 116 structures and 13 archeological sites located within the boundaries of the depot. You are seeking our comments on your determination of the eligibility of the structures located on the depot for inclusion on the National Register of Historic Places (NRHP) in accordance with the provisions of Section 106 of the National Historic Preservation Act. Our review of the submitted documentation lead us to concur that none of the properties surveyed in the submitted July 1993 report are eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4. None of the inventoried structures have any associations with significant events or persons, nor are they outstanding examples of their architectural types. The construction dates on all but two of the structures also disqualifies them also because they do not reach the minimum requirement of fifty years of age.

Thank you again for seeking our comments on your project.
If you have any questions, please contact staff historian
Clarence Caesar at (916) 653-8902.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Steade R. Craig', written over the word 'Sincerely,'.

Steade R. Craig, A.T.A.
Acting State Historic Preservation Officer

Native American Graves Protection and Repatriation Act Compliance Letter



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENVIRONMENTAL CENTER
ABERDEEN PROVING GROUND, MARYLAND 21010-5401



SFIM-AEC-ECN (200-1a)

14 AUG 1995

MEMORANDUM FOR Chief, Environmental Office, Sacramento Army
Depot, 8350 Fruitridge Rd., Sacramento, CA
95813

SUBJECT: Results of Native American Graves Protection and
Repatriation Act Compliance Analysis for Sacramento Army Depot

1. References:

- a. NAGPRA of 1990, P.L. 101-601.
- b. Memorandum, USAEC, SFIM-AEC-ECN, 18 Nov 94, subject:
Native American Graves Protection and Repatriation Act Compliance
for the U.S. Army.
- c. Memorandum for Record, USAEC, SFIM-AEC-ECN, 15 Nov 94,
subject: Native American Graves Protection and Repatriation Act
Compliance for the U.S. Army.

2. The purpose of this memorandum is to inform you that the
results of the U.S. Army Environmental Center's (USAECs) Native
American Graves Protection and Repatriation Act (NAGPRA)
compliance review for your installation indicates that you
currently have no items subject to NAGPRA requirements.

a. Reference 1a imposes certain requirements upon federal
agencies in possession or control of Native American human
remains or cultural items, as defined in NAGPRA. As described in
references 1b and 1c, USAEC has initiated a centrally-funded
Army-wide NAGPRA Compliance Program. As part of this program,
the Army Corps of Engineers-St. Louis District, Mandatory Center
of Expertise for the Curation and Management of Archeological
Collections (MCX), has completed the NAGPRA Section 5 Inventory
and Section 6 Summary research for your installation. In so
doing, the MCX contacted Mr. Robert Lodato for assistance. His
cooperation was commendable and greatly appreciated.

b. The result of the NAGPRA compliance activity was
negative. Telephone interviews and state archeological site file
searches were conducted and it was determined that Sacramento
Army Depot is not currently in possession or control of any
collections that might contain NAGPRA human remains or cultural
items. Therefore, no further action under NAGPRA Section 5 or
Section 6 is required. The USAEC recommends that Sacramento Army

114 AUG 1995

SFIM-AEC-ECN

SUBJECT: Results of Native American Graves Protection and Repatriation Act Compliance Analysis for Sacramento Army Depot

Depot document this determination with a memorandum for record, and keep all relevant materials on file.

3. If you have any questions regarding NAGPRA compliance, or the research conducted by the St. Louis District, the point of contact on this matter is Ms. Constance Callahan at USAEC, DSN 584-1573 or (410) 671-1573; Internet cmcallah@aec1.apgea.army.mil.

FOR THE COMMANDER:



DAVID C. GUZEWICH

Chief

Environmental Compliance Division

CF:

HQDA(DAIM-ED-N/MR. MARROQUIN), ACSIM, 600 ARMY PENTAGON, WASH DC
20310-0600

COMMANDER

U.S. ARMY MATERIEL COMMAND, ATTN: AMCEN-ER (MS. MARIA CHUCK-LONGO), 5001 EISENHOWER AVENUE, ALEXANDRIA, VA 22333-5000

U.S. ARMY ENGINEER DISTRICT, ST. LOUIS, ATTN: CELMS-PD-C
(DR. TRIMBLE), 1222 SPRUCE ST., ST. LOUIS, MO 63103-2833

U.S. Fish and Wildlife Service Biological Opinion Letter



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Sacramento Field Office
2800 Cottage Way, Room E-1803
Sacramento, California 95825

1-1-95-F-133

September 20, 1995

Colonel Stephen W. Boone
Deputy Chief of Staff, Engineer
Headquarters, United States Army Reserve Command
3800 North Camp Creek Parkway SW
Atlanta, GA 30331-5099

Subject: Formal Section 7 Consultation on Proposed Construction at
the B. T. Collins Army Reserve Training Center, Sacramento,
Sacramento County, California

Dear Colonel Boone:

This responds to your request of August 22, 1995 for expedited formal consultation under section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), on proposed construction that will fill seasonally ponded habitat at the B. T. Collins Army Reserve Training Center (Reserve Center) in Sacramento County, California. Your request for formal consultation was received on August 28, 1995. In your request, you asked that this project be appended to our programmatic vernal pool consultation (file 1-1-95-F-056). However, that programmatic consultation is between the Service and a different agency, the U. S. Army Corps of Engineers (Corps), and it involves a different action, i.e., issuance of permits under section 404 of the Clean Water Act. Therefore we cannot append this consultation to that programmatic consultation, but must engage in separate formal consultation with you on the proposed Reserve Center project. This document represents the Service's biological opinion on the effects of that action on the federally listed as threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the federally listed as endangered vernal pool tadpole shrimp (*Lepidurus packardii*) in accordance with section 7 of the Act.

This biological opinion is based on information provided in your letter of August 22, 1995, requesting formal consultation in addition to information in the Wetland Delineation Report: B. T. Collins Army Reserve Training Center Sacramento, California (Foster Wheeler Environmental Corporation 1995a) and in the B. T. Collins Army Reserve Training Center 1994-1995 Vernal Pool Crustacean Presence/Absence Survey 60-day Report (Foster Wheeler Environmental Corporation 1995b). Dr. Bill Beckon, Ms. Lori Rinek, and Dr. David Wright of my staff visited the project site with Dr. Richard Sitts and Ms. Debra Crowe of Foster Wheeler Environmental Corporation, Major Rodney Gettig of the U. S. Army Corps of Engineers, and Mr. Dan Oburn of the Sacramento Army Depot on June 2, 1995. A complete administrative record of this consultation is on file in this office.

BIOLOGICAL OPINION

Description of the Proposed Action

The closure and reconveyance of the Sacramento Army Depot (Depot) on March 3, 1995, necessitated expansion of facilities on the B.T. Collins Army Reserve Training Center (Reserve Center) to accommodate the relocation of the United States Army Reserves. The existing Reserve Center site is partially developed and has little available construction space for the four buildings and parking lots needed for relocation of 600 personnel and equipment from the Depot. Construction of the new facilities is envisioned to require the entire 39.1 acre parcel, which would cause the loss of 2.51 acres of ponded areas that are considered known or potential vernal pool fairy shrimp habitat on the Reserve Center.

Description of the Project Area

The B.T. Collins Army Reserve Training Center is located approximately 7 miles southeast of downtown Sacramento. It is on the southern portion of the former Sacramento Army Depot, bordered on the south by Elder Creek Road, on the north by Kwajalein Street, on the west by the Navy/Marines Reserves and on the east by the California National Guard area (Sacramento East Quadrangle, T.8N., R.5E., Section 26).

The Reserve Center comprises 39.1 acres of flat, maintained grassy fields, landscaped areas, buildings, roads and paved parking lots. The area was farmed for more than 20 years before the Depot was developed in 1946. The area is partially developed with roads and buildings covering approximately 50 percent of the Reserve Center; landscape areas, a running track, tennis court, and baseball diamond covering approximately 20 percent; and approximately 30 percent remains as maintained grassy fields. Over the years, the grassy fields have been graded for drainage and mowed for fire control. In clay-lined depressions in grassy areas of the site, 2.51 acres of seasonal wetlands now exist. Of these ponded areas, two tenths of an acre consists of ditches and seasonal pools that are isolated in the northern portion of the site and are highly disturbed and/or artificially created incidental to construction activities. The remaining 2.31 acres comprise a cluster of seasonally ponded areas, some of which may be remnants of ancient vernal pools. Vernal pool fairy shrimp have been found in some of these seasonal wetlands in the southern portion of the site (Foster Wheeler Environmental Corporation 1995b). The area surrounding the Reserve Center is predominantly open space and industry with various vacant lots located between warehouses, commercial facilities and residences.

Biological Conservation Measures

The impacts of this project on vernal pool fairy shrimp and vernal pool tadpole shrimp will be minimized as follows:

- A. **Preservation component.** Prior to the first earthmoving activities, at least 5.02 vernal pool credits will be dedicated within a Service-approved ecosystem preservation bank.
- B. **Creation component.** Prior to the first earthmoving activities, at least 2.31 vernal pool creation credits will be dedicated within a Service-approved habitat mitigation bank.

Environmental Baseline

A description of the vernal pool fairy shrimp and the vernal pool tadpole shrimp is given in 59 **Federal Register** 48136 - 48153, the publication of the final rule listing these species under the Act. These crustaceans are restricted to vernal pools and swales and other temporary aquatic habitats in California. Eng et al. (1990) and Simovich et al. (1992) provide further details on the life history and ecology of the vernal pool fairy shrimp and the vernal pool tadpole shrimp.

The vernal pool fairy shrimp, *B. lynchi*, inhabits vernal pools with tea-colored water, most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. This fairy shrimp has been collected from early December to late May. There are 32 known populations of the vernal pool fairy shrimp, extending from Stillwater Plain in Shasta County through most of the length of the Central Valley to Pixley in Tulare County, and along the central Coast Range from northern Solano County to Pinnacles National Monument in San Benito County. Four additional, disjunct populations exist: one near Soda Lake in San Luis Obispo County, one in the mountain grasslands of northern Santa Barbara County, one on the Santa Rosa Plateau in Riverside County, and one near Rancho California in Riverside County.

The vernal pool tadpole shrimp is known from 18 populations in the Central Valley, ranging from east of Redding in Shasta County south to the San Luis National Wildlife Refuge in Merced County, and from a single vernal pool complex located on the San Francisco Bay National Wildlife Refuge in the City of Fremont, Alameda County. This animal inhabits vernal pools containing clear to highly turbid water, ranging in size from 54 square feet in the Mather Air Force Base area of Sacramento County, to the 89 acre Olcott Lake at Jepson Prairie.

The vernal pool fairy shrimp and the vernal pool tadpole shrimp are imperiled by habitat loss caused by a variety of human-caused activities, primarily urban development, water supply/flood control projects, and conversion of land to agricultural use. Only a small proportion of the habitat of these crustaceans is protected from these threats. State and local laws and regulations have not been passed to protect the vernal pool fairy shrimp and vernal pool tadpole shrimp and other regulatory mechanisms necessary for the conservation of the habitat of the vernal pool fairy shrimp and the vernal pool tadpole shrimp have proven ineffective.

Holland (1978) estimated that between 67 and 88 per cent of the habitat that once supported vernal pools, the endemic habitat of the vernal pool fairy shrimp and the vernal pool tadpole shrimp, had been destroyed by 1973. In the ensuing twenty-one years, a substantial amount of remaining habitat has been converted for human uses. The rate of loss of vernal pool habitat in the state has been estimated at two to three per cent per year (Holland and Jain 1988). Rapid urbanization of the Central Valley of California currently poses the most severe threat to the continued existence of the vernal pool fairy shrimp. The Sacramento District of the U. S. Army Corps of Engineers has several thousand vernal pools under its jurisdiction (Coe 1988), which includes most of the known populations of the vernal pool fairy shrimp. It is estimated that within 20 years 60 to 70 per cent of these will be destroyed by human activities (Coe 1988).

Status of the Species in the Action Area

Some of the seasonal wetlands in the Reserve Center area may be remnants of what was formerly a pristine vernal pool ecosystem, but which has been converted to urban uses in the Sacramento metropolitan area. Vernal pool fairy shrimp have been found in several of the seasonally ponded areas in the southern portion of the Reserve Center (Foster Wheeler Environmental Corporation 1995b).

Effects of the Proposed Action

Direct Effects

The construction of the Reserve Center project will result in the death of all vernal pool fairy shrimp and vernal pool tadpole shrimp and/or all their cysts in all 2.51 acres of seasonal wetland habitat on the project site.

Indirect Effects

No indirect effects of this project on the Reserve Center site are anticipated because the proposed construction will directly affect all known and potential habitat of listed vernal pool crustaceans on the project site. This project will not have a significant indirect effect on off-site vernal pool crustaceans because the site is surrounded by drainage ditches, roads, and other development. However, this project will contribute to a local and range wide trend of urbanization and habitat loss and degradation, the principal reasons that the vernal pool tadpole shrimp, and the vernal pool fairy shrimp, have declined.

Cumulative effects

Cumulative effects include the effects of future State, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The proposed action is part of a pattern of widespread and rapid urbanization in the Sacramento area in which the habitats of the vernal pool fairy shrimp and the vernal pool tadpole shrimp are quickly declining in area and quality. Compensation in the form of off-site preservation and creation of habitat for the listed crustaceans will likely offset the effects of the proposed action.

Future projects that propose to fill or alter the wetland habitat of these species will be subject to Corps permit under the Nationwide Permit Number 26 or section 404 of the Clean Water Act. These actions constitute future Federal actions that are unrelated to the proposed action. As such, they are not considered cumulative effects because they require separate consultation pursuant to section 7 of Act. However, an undetermined number of future proposed projects that may alter the habitat of the vernal pool fairy shrimp and the vernal pool tadpole shrimp will not be subject to these permitting processes and, as such, are cumulative to the proposed project.

Conclusion

After reviewing the current status of the vernal pool fairy shrimp and vernal pool tadpole shrimp, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the

Service's biological opinion that the Reserve Center project, as described here, is not likely to jeopardize the continued existence of the vernal pool fairy shrimp or the vernal pool tadpole shrimp. No critical habitat has been designated for these species, therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the Act prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include but are not limited to, breeding, feeding or sheltering. Incidental take is any take of listed animal species which result from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with this incidental take statement.

The stipulations described below as reasonable and prudent measures and terms and conditions are nondiscretionary. In order for the exemption in section 7(o)(2) to apply, these stipulations must be implemented by the U. S. Army Reserve Command (Army Reserve) so that they become binding conditions of any grant, permit, contract or work order related to the project described in this consultation document. The Army Reserve has a continuing duty to regulate the activity covered by this incidental take statement. If the Army Reserve (1) fails to require any entity participating in the project to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, grant, contract, or work order document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Incidental Take

The Service anticipates incidental take of the vernal pool fairy shrimp and the vernal pool tadpole shrimp to be in the form of the death of all individuals of these species and/or all their cysts in all 2.51 acres of seasonal wetland habitat on the project site.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the vernal pool fairy shrimp and vernal pool tadpole shrimp, or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the vernal pool fairy shrimp and vernal pool tadpole shrimp:

The overall loss of vernal pool habitat shall be minimized.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

Biological conservation measures A and B outlined on page 2 of this formal consultation document shall be implemented.

Reporting Requirements: The Sacramento Field Office is to be notified within three working days of the finding of any dead listed species or any unanticipated harm to the species addressed in this biological opinion. The Service contact person for this is the Assistant Field Supervisor at (916) 979-2725.

Review Requirements: The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the effects of incidental take that might otherwise result from the proposed action. With implementation of these measures the Service believes that no more than the number of vernal pool fairy shrimp, vernal pool tadpole shrimp, and their cysts in 2.51 acres of seasonal pools will be destroyed. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take represents new information requiring review of the reasonable and prudent measures provided. The Army Reserve must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions from the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the Army Reserve's 7(a)(1) responsibilities for these species.

1. Until construction occurs that necessitates fill of seasonal wetlands, the Army Reserve should minimize disturbance to seasonal wetland habitat.
2. The uppermost layer of soil in the seasonal wetlands in the southern portion of the Reserve Center site contains fairy shrimp cysts as well as seeds of vernal pool plants. Therefore, before these wetlands are filled, the Army Reserve should make the top layer of soil available to any vernal pool creation bank that requests it, with Service approval, for inoculating newly created pools.
3. The Army Reserve should avoid disturbing known habitat of the burrowing owl (*Athene cunicularia*) on the Reserve Center.

Colonel Stephen Boone

7


In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION - CLOSING STATEMENT

This concludes formal consultation on work described in the request. As provided for in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to listed species critical habitat that was not considered in this opinion; or (4) a species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take should cease pending reinitiation.

If you have any questions regarding this opinion, please contact Bill Beckon of my staff at (916) 979-2718 ext. 366.

Sincerely,



602 Joel A. Medlin
Field Supervisor

cc: ARD-ES
FWS-Wetlands Branch, Sacramento, CA
COE Sacramento District, Sacramento, CA
CDFG, Sacramento, CA (Attn. David Zezulak)

Literature Cited

- Coe, T. 1988. The application of Section 404 of the Clean Water Act to Vernal Pools. Pages 356-358. IN J. A. Kusler, S. Daly, and G. Brooks, eds. Urban Wetlands. Proceedings of the National Wetland Symposium. Oakland, California.
- Eng, L. L., D. Belk, and C. H. Erickson. 1990. California anostraca: distribution, habitat, and status. *Journal of Crustacean Biology* 10(2):247-277.
- Foster Wheeler Environmental Corporation. 1995a. Wetland Delineation Report: B. T. Collins Army Reserve Training Center Sacramento, California. Prepared for U. S. Army Corps of Engineers, Sacramento District. June 1995.
- Foster Wheeler Environmental Corporation. 1995b. B. T. Collins Army Reserve Training Center 1994-1995 Vernal Pool Crustacean Presence/Absence Survey 60-day Report. Prepared for U. S. Fish and Wildlife Service, Sacramento Field Office. June 1995.
- Holland, R. F. 1978. The geographic and edaphic distribution of vernal pools in the Great Central Valley, California. *California Native Plant Society*. Special Publ. 4:1-2.
- Holland, R. F., and S. Jain. 1988. Vernal Pools. IN M. E. Barbour and J. Major, eds., *Terrestrial Vegetation of California*. Pages 515-533. Sacramento, California.
- Simovich, M. A., R. C. Brusca, and J. L. King. 1992. Invertebrate survey, PGT-PG&E/Bechtel Pipeline Expansion Project.
- United States Fish and Wildlife Service. 1994. Endangered and threatened wildlife and plants; determination of endangered status for the conservancy fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp; and threatened status for the vernal pool fairy shrimp. *Federal Register* 59: 48136-48153.

U.S. Nuclear Regulatory Commission and Cal/EPA Radiation Clearance Letters



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

Walnut Creek Field Office
1450 Maria Lane
Walnut Creek, California 94596-5368

FEB 08 1995

Department of the Army
Sacramento Army Depot
ATTN: LTC Todd E. Blose
8350 Fruitridge Road
Sacramento, California 95813-5010

SUBJECT: LICENSE TERMINATION

Enclosed is the termination amendment which you requested in your Form NRC-314 dated February 1, 1995.

Sincerely,

Beth A. Prange

Beth A. Prange
Sr. Health Physicist (Licensing)
Materials Branch

Docket: 040-08107
License: STB-1101
Control: 572120

Enclosures: As stated

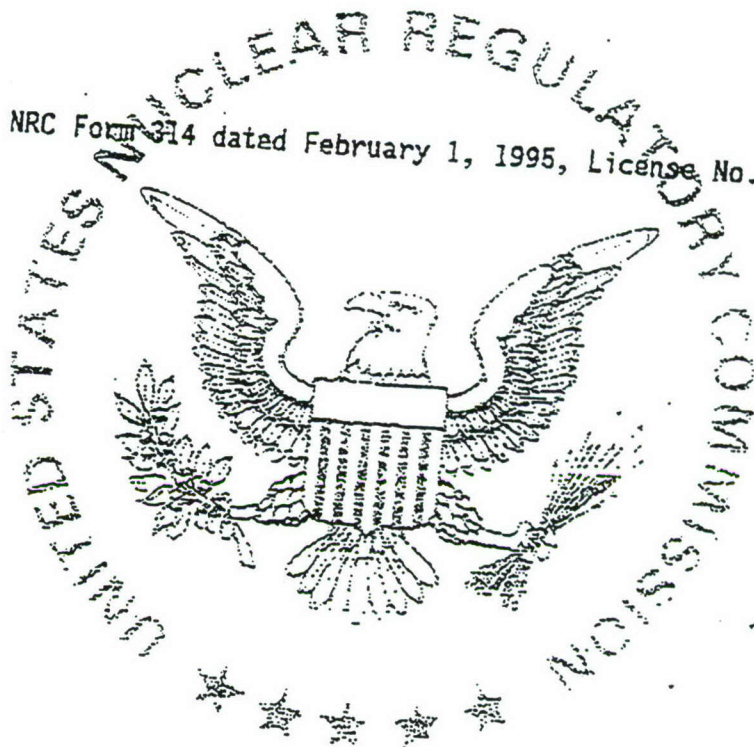
U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number	PAGE	OF	PAGE
STB-1101	1	1	
Docket or Reference number			
040-08107			
Amendment No. 10			

Department of the Army
Sacramento Army Depot
ATTN: LTC Todd E. Blose
8350 Fruitridge Road
Sacramento, California 95813-5010

In accordance with NRC Form 314 dated February 1, 1995, License No. STB-1101 is hereby terminated.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

ate FEB 08 1995

By Robert A. Pizange
Materials Branch
Region IV, WCFO
Walnut Creek, California 94596

Department of the Army
Sacramento Army Depot

-2-

cc w/enclosure:

Docket File
WCFO Inspection File
LFDCB, T-9, E10
State of CA (License Only)

California Radiation Control Program Director

US Army Environmental Hygiene Agency
ATTN: Harris Edge
Health Physics Division
Aberdeen Proving Ground, Maryland 21010-5422

Michael Chastain, RSO
Radiation Safety Office
8350 Fruitridge Road, Bldg. 325
Sacramento, California 95813-5071

Director
US Army TMDE Activity
ATTN: Gregory R. Komp, AMXTM-SR
Redstone Arsenal, Alabama 34898-5400

US Army Corps of Engineers
ATTN: Jackie Cumpston, Base Closure Section
Real Estate Div.
1325 J Street
Sacramento, California 95814-2922

State Water Resources Control Board
ATTN: Leslie S. Laudon, Base Closure
Environmental Committee
2014 T Street, Suite 130
P.O. Box 944212
Sacramento, California 94244-2120

DOCUMENT NAME: P:\G:\beth\572117.r

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 1
10151 CROYDON WAY, SUITE 3
SACRAMENTO, CA 95827-2106

(916) 255-3707



Lt. Colonel Todd E. Blöse
Commander
Sacramento Army Depot Activity
8350 Fruitridge Road
Sacramento, California 95813

COMPLETION OF RADIATION SURVEY REVIEW AND APPROVAL FOR RELEASE OF
SPECIFIC AREAS OF SACRAMENTO ARMY DEPOT ACTIVITY

Dear Lt. Colonel Blöse:

Based on the California Department of Health Services (DHS) review of the radiation survey data collected at the Sacramento Army Depot Activity (SADA) the areas specified in the attached memo from DHS are considered appropriate for unrestricted use. The radiation information compiled by the Army and analyzed by DHS personnel indicates that past use and storage of radioactive material at SADA has not resulted in residual contamination and no remedial action is necessary. This finding allows these areas of SADA to be transferred. Additional radiation survey information is required for those areas of SADA that are not proposed for transfer at this time. To comply with the DHS certification for release, the Army must submit a final verification report to DHS by April 8, 1995. The requirement for this report in no way delays the proposed release and transfer of these areas.

Please contact me at (916) 255-3707 if you have any questions.

Sincerely,

Christine L. Parent

Christine L. Parent
Remedial Project Manager
Base Closure Unit

cc: See next page.



Lt. Colonel Todd E. Blose

Page Two

cc: Mr. Claude Goode
Associate Health Physicist
Department of Defense Program
Environmental Management Branch
Department of Health Services
P. O. Box 942732
Sacramento, California 94234-7320

Ms. Diana Peebler
Reuse Specialist
Office of Military Facilities
Base Closure and Conversion
P. O. Box 806
Sacramento, California 95812-0806

M e m o r a n d u m

Date : February 9, 1995
T-1
To : Ken Smith, Chief
Office of Military Affairs
Department of Toxics Substances Control
400 P Street

From : Environmental Management Branch
601 North 7th Street, MS-216
322-2308

Subject: Release of Buildings and Associated Parcels, Sacramento Army Depot

My staff have conducted radiation surveys of the buildings/parcels identified by the U.S. Army (Army) for release at the Sacramento Army Depot (SAD). We have also reviewed the history, sampling data, protocols and radiation surveys provided by the Army for those buildings/parcels. A significant portion of this review was done concurrently with staff of the U. S. Nuclear Regulatory Commission (NRC) whose license at the SAD included most of the buildings/parcels identified by the Army as being proposed for release.

The NRC has terminated its license for the buildings/parcels at SAD. We are pleased to inform you that the Department, based on its review of relevant documents, sampling results and radiation surveys has concluded that the following buildings/parcels are acceptable to the State: 242, 244, 246, 248, 251, 255, 257, 353 and 555. The Department finds that these buildings/parcels pose no radiological risk to visitors or occupants and no remedial action is necessary. The final verification report the Army is preparing must be submitted to the Department by April 8, 1995. The submittal of this report in no way affects or delays the release and/or transfer of the above referenced buildings/parcels.

Should you have questions about the SAD, please call Rufus B. Howell of my staff at 322-2040.



Jack S. McGurk, Chief

cc: Christine L. Parent
Remedial Project Manager
Base Closure Unit

Cal/EPA EBS/FOST Clearance Letter

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

400 P STREET, 4TH FLOOR
P.O. BOX 806
SACRAMENTO, CA 95812-0806



(916) 323-3521

February 9, 1995

Lieutenant Colonel Todd E. Blose
Commander
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, California 95813-5052

CONCURRENCE WITH THE FINAL FOSTS FOR THE TRANSFER OF PROPERTY AT
SACRAMENTO ARMY DEPOT ACTIVITY

Dear Lt. Colonel Blose:

The Department of Toxic Substances Control (DTSC) concurs with the final Finding of Suitability to Transfer (FOST) in support of the transfer of ownership for a portion of the Depot from the Army to the City of Sacramento and with the final FOST that supports the transfer of property to Health and Human Services for use by California Emergency Foodlink. We acknowledge that our comments will be incorporated in the final Environmental Baseline Surveys prepared for those areas to be transferred and that the final FOST documents reflect a legal review by DTSC.

We appreciate the spirit of cooperation reflected in the willingness on the part of the Army to work closely with us in the evolvment of these documents. It is through this close working relationship of the entire project team that has led to the timely cleanup and transfer of the Depot.

Please call me if you have any further questions. Thank you.

Sincerely,

A handwritten signature in cursive script that reads 'David Wang'.

David Wang, P.E.
Chief Program Executive
Base Closure and Conversion
Office of Military Facilities

cc: See next page.



Lieutenant Colonel Todd E. Blose
February 9, 1995
Page Two

cc: Ms. Diana Peebler
Department of Toxic Substances Control
Office of Military Facilities
301 Capitol Mall, Second Floor
P.O. Box 806
Sacramento, California 95812-0806

Mr. Robert Reeves
Regional Water Quality Control Board
Central Valley Region
3443 Routier Road
Sacramento, California 95827

Mr. Marlon Mezquita
U.S. Environmental Protection Agency
Region IX-H-9-2
75 Hawthorne Street
San Francisco, California 94105

Ms. Deirdre Nurre
U.S. Environmental Protection Agency
Region IX-H-9-2
75 Hawthorne Street
San Francisco, California 94105

Ms. Chris Parent
Department of Toxic Substances Control
Office of Military Facilities
10151 Croydon Way, Suite 3
Sacramento, California 95827

Ms. Suzanne Small
Department of Toxic Substances Control
Office of Legal Counsel
400 P Street, Fourth Floor
P.O. Box 806
Sacramento, California 95812-0806

USEPA EBS/FOST Clearance Letter



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco CA 94105-3901

February 10, 1995

Lieutenant Colonel Todd E. Blose
Commander
Sacramento Army Depot Activity
8350 Fruitridge Road
Sacramento, CA 95813-5052

Dear Lt. Colonel Blose:

EPA Region IX concurs with the final Finding of Suitability to Transfer (FOST) documents for the transfer of a portion of the SADA property. We are currently reviewing the Army's detailed response to our comments on the Environmental Baseline Surveys prepared for the parcels to be transferred. Once we complete that review, we expect to provide our 120 (h)(3) concurrence on the property transfer.

We appreciate the cooperation of the BCT members and the support team members in expediting the preparation and review of these transfer documents. If you have any questions, please call me at (415) 744-2411 or Marlon Mezquita, the EPA BCT member, at (415) 744-2393.

Sincerely,

Richard Seraydarian, Chief
Army and Pacific Islands Section
Office of Federal Facilities Cleanup

CC: DTSC

Department of the Army Report of Availability for Leasing Letter



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
INSTALLATIONS LOGISTICS AND ENVIRONMENT
110 ARMY PENTAGON
WASHINGTON DC 20310-0110
December 21, 1993



MEMORANDUM THRU THE DIRECTOR OF THE ARMY STAFF

FOR COMMANDER, U. S. ARMY CORPS OF ENGINEERS, ATTN: CERE-C,
WASHINGTON, D.C. 20314-1000

SUBJECT: Sacramento Army Depot (SAAD), Report of Availability
(ROA) for Leading

Subject ROA, as amended by Tabs B and C of your memorandum
of October 6, 1993, is approved.

Authority to approve and enter into interim leases at
Sacramento Army Depot is hereby delegated to the Commander
and the Deputy Commander, U.S. Army Corps of Engineers and
the Director of Real Estate, with power to redelegate to the
Commander, U.S. Army Engineer District, Sacramento Corps of
Engineers subject to the following:

a. This delegation of authority applies to any real
property at the Sacramento Army Depot which is under the
jurisdiction of the Secretary of the Army provided that (1)
the property is not excess, as defined by Title 40, United
States Code, Section 472; and (2) the property has been
determined to be available for lease in accordance with
applicable regulations.

b. Such Real property may be leased for any purpose which
is not inconsistent with the Determination of Availability for
the Sacramento Army Depot or the policies of the Department of
the Army.

c. The Commander, U.S. Army Engineer District, Sacramento
Corps of Engineers may not redelegate this authority.

The requirements of the Stewart B. McKinney Homeless
Assistance Act shall be complied with before any property may
be leased under this delegation of authority.

The request in the ROA for approval to authorize leases
to store and use non-Defense toxic and hazardous materials



compatible with the use of an industrial type facility requires the submittal of a delegation of authority request to this office.

Leases containing a provision granting lessee the first right to buy the property shall be submitted to the Office of the Deputy Assistant Secretary of the Army (Installations and Housing) for approval.

The overall disposal strategy for SAAD must be submitted to this office by March 1, 1994.



Paul W. Johnson
Deputy Assistant Secretary of the Army
(Installations and Housing)
OASA(I,L&E)

Encls

MODIFICATIONS TO THE ROA
SACRAMENTO ARMY DEPOT

1. The delegation to approve leases will be through the Corps of Engineers, South Pacific Division (CESPD) to Corps of Engineers, Sacramento District (CESPK).

2. In accordance with Deputy Secretary of Defense memo, 9 Sep 93, subject: Fast Track Cleanup at Closing Bases, a Finding of Suitability to Lease (FOSL) is required for all leases. The environmental review process set forth therein shall be followed for all leases. State environmental regulators must be involved in the preparation of all FOSLs. In addition, model lease provision language specific to environmental protection must be included in all leases.

3. All leases must be compatible with the Federal Facilities Agreement for the installation.

4. Leases involving the storage of toxic and hazardous waste must be approved by the appropriate environmental offices.

5. Leases involving states or political subdivisions will be treated the same as all other leases under the ROA. They should not be forwarded to the Department of the Army for approval unless otherwise required herein.

6. Leases shall provided for the payment of consideration in an amount that is not less than the fair market value of the lease interest. In accordance with Title 10, United States Code, Section 2667, such leases may provide for the improvement, maintenance, protection, repair, or restoration, by the lessee, of the property leased as the payment of part or all of the consideration for the lease.

7. Leases may only be approved by the Commander, U.S. Army Engineer District, Sacramento Corps of Engineers under this delegation in accordance with the following:

a. No leases will be executed until a disposal plan has been completed.

b. The term of leases shall not exceed one year.

c. A Finding of Suitability to Lease must be approved prior to the execution of any lease.

d. A workshop for homeless providers (McKinney Act) must be conducted before any leases are executed or the Army makes a commitment to lease.

e. Leases shall not deviate from the Report of Availability.

f. Competition will not be waived for private entities without advance approval of Headquarters, U.S. Army Corps of Engineers. For public entities, advance approval to waive competition is not required.

**SACRAMENTO ARMY DEPOT
HQ USACE OVERSIGHT OF LEASING ACTIVITIES**

1. HQ USACE will provide guidance with respect to policy issues.
2. A disposal concept for the entire installation will be prepared and submitted to HQ USACE prior to the delegation becoming effective. The concept must, as a minimum, address the following issues:
 - a. When will final disposal of the property occur?
 - b. What actions must take place prior to disposal and when will the actions be accomplished (timelines)?
 - c. How does leasing complement final disposal plans?
 - d. How will the transition from leasing to final disposal be handled?
 - e. Explain relationship between community reuse plan and leasing actions.
3. HQ USACE will review disposal concept and ensure that leases are compatible with the concept.
4. Sacramento District will maintain an inventory of leases which have been executed and provide a synopsis of the inventory to HQ USACE on a monthly basis. Synopsis should include a brief description of significant features of each lease.
5. Sacramento District shall obtain HQ USACE approval of any leases which are unusual, controversial or which deviate from the provisions of the ROA. This includes deviations from the appropriate indemnification language for environmental contamination.
6. Leases requiring a waiver of competition must be approved in advance by HQ USACE.
7. HQ USACE will use regularly scheduled teleconferencing to discuss and resolve issues for significant leases (in terms of size or sensitivity).

Ordnance and Explosive Waste Memo



DEPARTMENT OF THE ARMY
HUNTSVILLE DIVISION. CORPS OF ENGINEERS
P.O. BOX 1600
HUNTSVILLE, ALABAMA 35807-4301

REPLY TO
ATTENTION OF

CEHND-PM-OT (415-10f)

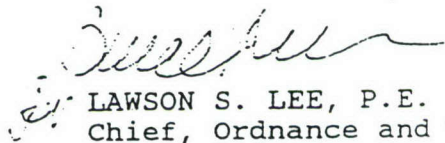
18 March 1993

MEMORANDUM FOR Commander, U.S. Army Engineer District, Sacramento
ATTN: CESPK-PM-M (MAJ Tennant), 1325 J Street,
Sacramento, CA 95814-2922

SUBJECT: Sacramento Army Depot

1. The Mandatory Center of Expertise for Ordnance and Explosive Waste (OEW) has reviewed the Environmental Planning Guide for Sacramento Army Depot. Review of the Depot's history, current mission and the site maps in the Environmental Planning Guide yields no information that indicates a concern for OEW.
2. Based on our review of the information provided, the land is suitable for transfer without restrictive covenants for OEW.
3. If you have any questions, please do not hesitate to call the Project Manager, Mr. Charles "Hud" Heaton, at DSN 645-5206 or commercial 205-955-5206.

FOR THE DIRECTOR OF PROGRAMS
AND PROJECT MANAGEMENT:


LAWSON S. LEE, P.E.
Chief, Ordnance and Technical
Programs Division

Proposed Plan for On-Site Groundwater Remediation



PROPOSED PLAN FOR ON-SITE
GROUND WATER REMEDIATION
AT THE SACRAMENTO ARMY DEPOT

This is a Proposed Plan for cleanup of ground water at the Sacramento Army Depot (SAAD). The purpose of the Proposed Plan is to inform the community of the work being performed at the SAAD site, and:

- * highlight key information about the site (Pages 1 - 4)
- * describe the alternatives considered for ground water cleanup (Page 4)
- * identify the preferred cleanup alternative and explain our reasons (Page 10)
- * solicit your involvement in the decision making process.

SITE DESCRIPTION

SAAD is an electronics maintenance and repair depot consisting of storage, maintenance, and office facilities at 8350 Fruitridge Road, in Sacramento. Present operations at the SAAD include shelter repair, electro-optics equipment repair, metal plating, and treatment of metal plating wastes.

The SAAD is located in the center of Sacramento County, approximately 7 miles southeast of downtown Sacramento. Encompassing approximately 485 acres (15,500 square kilometers), SAAD is immediately surrounded on all sides by land zoned as commercial/light industrial property. A map of the site is shown (Figure 1).

SAAD has a topography that is relatively flat with ground surface elevations ranging from 36 to 42 feet above mean sea level. SAAD is situated within the Morrison Creek drainage basin with Morrison Creek being the only surface water located near the depot. Until it was diverted around the southern border of the site by the U.S. Army Corps of Engineers in 1945, Morrison Creek bisected SAAD at the center of the eastern boundary and flowed across the site toward the west. Morrison



Creek discharges into the two overflow basins of the Sacramento and American Rivers and eventually empties into the Sacramento River. Mean annual precipitation at the site is approximately 17 inches.

Depth to ground water beneath the site is approximately 78 feet. The ground water gradient is approximately 1.5 feet per thousand feet and the flow direction is to the south-southwest.

Subsurface geologic data from SAAD indicates a number of small sand channels exist in the upper 140 feet which are difficult to trace. This upper section has been grouped into two zones, "A" and "B", based on the relative permeabilities of the lithologies encountered. Beneath the "B" zone at a depth of about 140 feet, a silty zone occurs with a thickness varying from 8 to 14 feet. This zone appears to be a relatively continuous confining layer. This zone overlies the "C" zone, which has an approximate thickness of 20 to 25 feet. The "C" zone is underlain by a clayey silt zone approximately 8 to 15 feet thick. The "C" zone overlies the "D" zone, which is encountered at approximately 200 feet below ground surface.

A review of aerial photographs by the U.S. Environmental Protection Agency (USEPA) showed several areas where past industrial practices may have created contamination. Ground water samples collected by SAAD from 1981 to 1988 indicated that several chemical compounds were present, primarily trichloroethene, tetrachloroethene, 1,2-dichloroethane, and cis/trans-1,2-dichloroethene. These compounds have been detected at levels above drinking water standards in the "A" and "B" zones. The approximate boundary of the plume is shown (Figure 2). An area known as the burn pits is considered the likely source of the organic compounds found in ground water at the SAAD site.

SAAD is proposing to contain, extract and treat contaminated ground water. The ground water cleanup is intended to reduce potential health risks from exposure to contaminated ground water by treating the water to meet Federal and State drinking water standards. A wide range of clean-up alternatives have been considered. Some alternatives have been eliminated during preliminary screening because they did not effectively address contamination, there were potential problems associated with the implementation of the alternative, or the costs were excessive compared to other alternatives that achieve the same degree of protection. The alternative proposed for use at the SAAD entails extraction of the affected ground water, treatment using ultraviolet/chemical oxidation technology, and reuse of the ground water at a local industrial facility.

The Army is the lead agency in charge of the project at the SAAD. The USEPA and



DHS have worked closely with SAAD to develop this proposed groundwater remediation strategy in accordance with a Federal Facilities Agreement which became effective in March 1989.

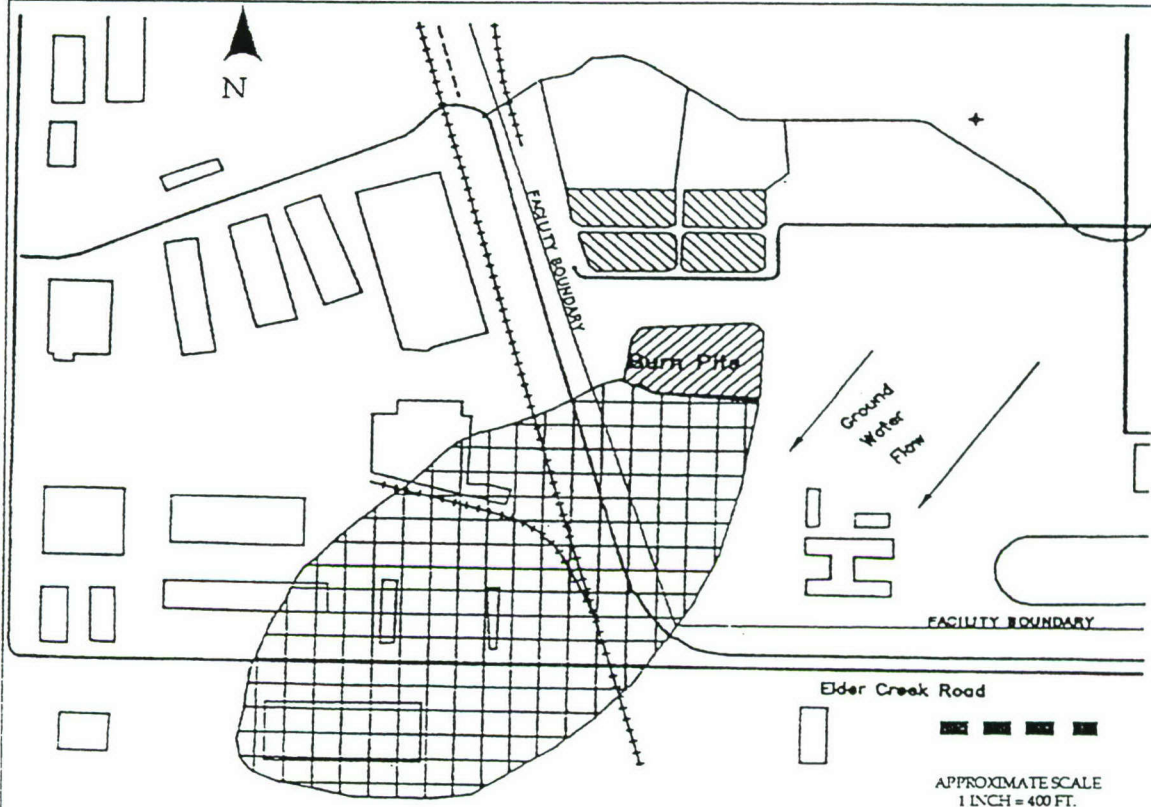


FIGURE 2: APPROXIMATE PLUME BOUNDARIES

SUMMARY OF ALTERNATIVES CONSIDERED

Fourteen clean-up options for the SAAD site were considered in an Operable Unit Feasibility Study (OUFS). After evaluating options for technical feasibility, implementability, and cost, a detailed analysis was performed on the six most feasible alternatives. Each of the six alternatives is briefly described below:

1. No Action - The no-action alternative was used as a baseline to evaluate other potential alternatives. Under the no action alternative, no control or remediation of the affected ground water would occur. However, a limited ground water



monitoring program would monitor for the presence of the organic compounds

and track their migration from the SAAD site. Immediate implementation of this alternative is possible.

Estimated Construction Cost:

\$51,000

Estimated Annual Maintenance

Costs: \$25,000

2. Ground Water Extraction, Treatment by Air Stripping, and Surface Discharge

Under this alternative, wells extract the affected ground water, contamination is removed from the extracted ground water by air stripping,

and treated ground water is discharged to Morrison Creek. Compounds removed from the ground water by the air stripper would be transferred to the air without further treatment. Other alternatives using air stripping with air emission control were considered, however, were eliminated during preliminary screening due to excessive costs. This alternative also includes monitoring of ground water, surface water, treatment plant influent, and discharge water over the term of the operation to assess the effectiveness of extraction and treatment, and compliance with discharge requirements. Construction could be completed within approximately 12 months. The overall quality of ground water in the aquifer would be restored to meet current drinking water standards after 10 to 15 years of operation.

Estimated Construction Cost: \$1,170,000

Estimated Annual Maintenance Costs: \$242,000

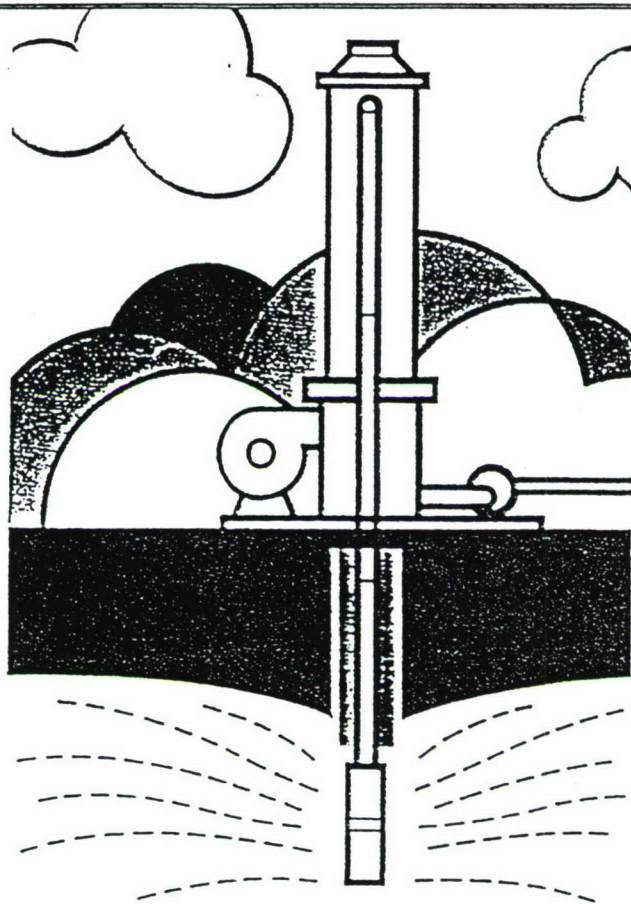


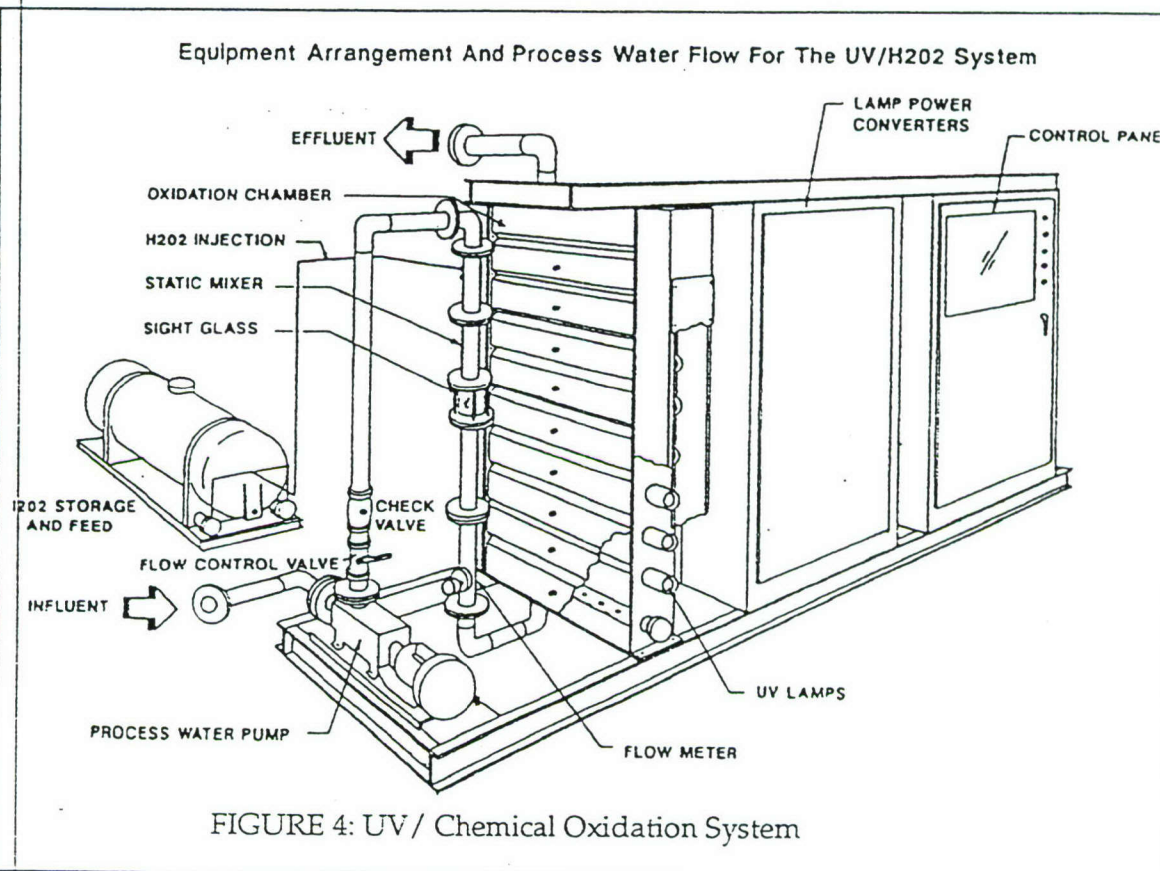
FIGURE 3: Air Stripper



3. Ground Water Extraction, Treatment by Air Stripping, and Industrial Reuse This alternative is similar to Alternative 2 above, except that treated water would be discharged to a local industrial facility for reuse instead of to Morrison Creek. Other construction details and monitoring requirements will be the same. The overall quality of ground water in the aquifer would be restored to meet current drinking water standards after 10 to 15 years of operation.

Estimated Construction Cost: \$1,345,000

Estimated Annual Maintenance Costs: \$207,000



4. Ground Water Extraction, Treatment with Ultraviolet/Chemical Oxidation, and Surface Discharge - This alternative is similar to Alternative 2 except that ultraviolet (UV)/chemical oxidation is used for treatment of groundwater, not air stripping. The organic contamination in the extracted water would be destroyed as the water passes through the treatment process, without releases to the air or creation of residual wastes. Other construction details and monitoring requirements will be the same. Construction of this alternative could be completed in approximately 12



months. The overall quality of ground water in the aquifer would be restored to meet current drinking water standards after 10 to 15 years of operation.

Estimated Construction Cost: \$1,530,000
Estimated Annual Maintenance Costs: \$298,000

5. Ground Water Extraction, Treatment with Ultraviolet/Chemical Oxidation, and Industrial Reuse - This alternative is similar to Alternative 4 above, except the treated water would be discharged to a local industrial facility, not to surface water. Other construction details and monitoring requirements will be the same. Construction of this alternative could be completed within about 12 months. The overall quality of ground water in the aquifer would be restored to meet current drinking water standards after 10 to 15 years of operation.

Estimated Construction Cost: \$1,764,000
Estimated Annual Maintenance Costs: \$264,000

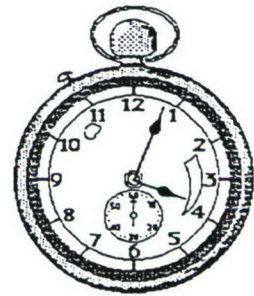
6. Ground Water Extraction and Discharge to the Sacramento Regional Wastewater Treatment Plant - Under this alternative wells would extract ground water, which would then be discharged without treatment to the Sacramento Regional Wastewater Treatment Plant (SRWTP). The organic compounds in the water would be diluted in the sewer system and ultimately released to the air in the treatment plant, and discharged to the Sacramento River. This alternative also includes monitoring of ground water and discharge water to assess the effectiveness of the extraction process, and compliance with discharge requirements. Construction of the alternative could be completed in about 12 months. The quality of ground water in the aquifer would be restored to meet current drinking water standards after 10 to 15 years of operation.

Estimated Construction Cost: \$1,316,000
Estimated Annual Maintenance Costs: \$197,000

EVALUATION OF ALTERNATIVES

The six most feasible alternatives were evaluated with respect to nine evaluation criteria, which are summarized below:

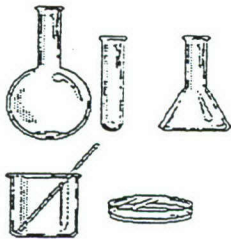
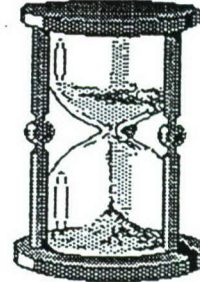
1. Short-term effectiveness - Addresses the period of time needed to complete the remedy, and to minimize any adverse impact on human health and the environment that may be posed





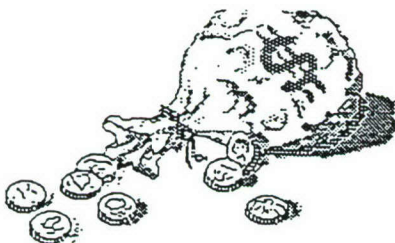
during the construction and implementation period, until the clean-up goals are achieved.

2. Long-term Effectiveness and Permanence - Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.



3. Reduction of Toxicity, Mobility and Volume Through Treatment-(TMV) - Refers to the anticipated ability of a remedy to reduce the toxicity, mobility, and volume of the hazardous components present at the site.

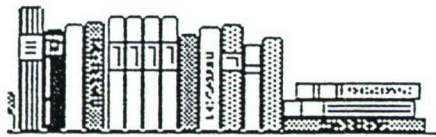
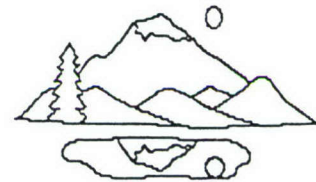
4. Implementability - Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.



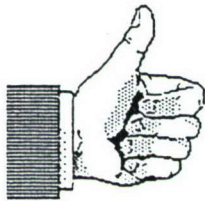
5. Cost - Evaluates the estimated capital and operation and maintenance costs of each alternative.



6. Overall Protection of Human Health and the Environment - Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced or controlled through treatment, engineering controls, or institutional controls.

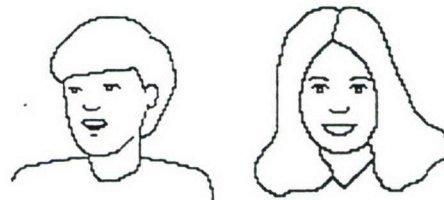


7. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs) - Addresses whether or not a remedy will meet all ARARs of federal and state environmental statutes and/or provide grounds for invoking a waiver.



8. State Acceptance - Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

9. Community Acceptance - Indicates whether community concerns are addressed by the remedy and whether or not the community has a preference for a remedy. Although public comment is an important part of the final decision, EPA is compelled by law to balance community concerns with all of the previously mentioned criteria.





SELECTION OF THE PREFERRED ALTERNATIVE

A summary of the alternatives is presented in Table 1. All of the final alternatives except Alternative 1 (No Action) considered use ground water extraction to control migration and remove contaminated ground water. The main differences are: 1) the treatment technology, if any, to be used to treat contaminated ground water prior to discharge, and 2) the discharge option to be used.

All of the alternatives considered except Alternative 1 provide protection of human health and the environment and meet the current ARARs. However, only alternatives that use UV/chemical oxidation result in permanent destruction of the contaminants, unlike air stripping or discharge to the SRWTP. The potential health risk associated with operation of a UV/chemical oxidation system is much lower than for air stripping because the organic compounds are not released to the air. Therefore, the most desirable alternative would use UV light/chemical oxidation for ground water treatment.

Three disposal options for the extracted ground water were evaluated: 1) surface water discharge to Morrison Creek, 2) industrial reuse, and 3) discharge to the SRWTP. Although no significant public health or environmental impacts are expected to result from the disposal options, alternatives that entail industrial reuse are preferred because the water would serve beneficial purposes. More time may be needed to implement industrial reuse because a long-term agreement with the industrial user would be necessary. Negotiating a water reuse agreement could delay implementation of the alternative; however, a delay could be avoided by temporarily discharging the treated ground water to the SRWTP.

Based on the information presented in this Proposed Plan and the OUFS report, Alternative 5 (ground water extraction, treatment with UV light/chemical oxidation, and industrial reuse) is the preferred alternative. Based on new information or public comments received during the public comment period, the Army may modify this alternative or select another alternative, with approval from the USEPA and DHS.

In summary, the preferred alternative is believed to provide the best balance among alternatives relative to the evaluation criteria used to weigh the potential options. Based on the information available at this time, the Army, the USEPA and the



California DHS believe the preferred alternative would be protective of human health and the environment, would attain current ARARs, would be cost-effective, and would use permanent solutions and alternative treatment technologies to the maximum extent practicable.

COMMUNITY INVOLVEMENT

This Proposed Plan is used to solicit your participation in the remedy selection process. The public comment period is open from 27 July 1989 to 25 August 1989. A public meeting to allow open discussion of the Proposed Plan will be held at 7:00 - 9 PM on Tuesday, August 8, 1989 at Will C. Wood Middle School, 6201 Lemon Hill Avenue, Sacramento, California. Comments concerning the preferred alternative, the Proposed Plan, or the OUFS report may be made in person at the meeting, or may also be directed to the following lead and support agency contact personnel:

Mr. Patrick Christman
Chief, Environmental Management Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, California 95813-5052

Mr. Vance Fong
Project Manager
U.S. Environmental Protection Agency, Region IX-T-4-6
215 Fremont Street
San Francisco, California 94105

Mr. Gordon Stephens
Project Manager
Department of Health Services
4250 Power Inn Rd.
Sacramento, California 95826

The Administrative Record contains many useful documents describing the environmental work being performed at the SAAD, e.g. information used to select the remedial alternative, including the OUFS report. It contains additional information



concerning the alternatives presented in the Proposed Plan. The Administrative Record is available for your review at the following locations:

California State University, Sacramento,
The Library - Science & Technology Reference Department
2000 Jed Smith Dr.
Sacramento, California 95819 - 2695
7:45 AM - 6:30 PM
Monday - Friday

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, California 95813 - 5052
9 AM - 3 PM
Monday - Friday



GLOSSARY OF TERMS

Administrative Record	Repository of documents with the information used to select a remedial action.
ARARs	Applicable or Relevant and Appropriate Requirements; ARARs may include any Federal or State standards, requirements, or criteria, or limitations that are determined to be legally applicable or relevant and appropriate to a CERCLA site or action
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980; also known as Superfund. Amended in 1986 by the Superfund amendments and Reauthorization Act (SARA).
DHS	Department of Health Services
IRP	Installation Restoration Program
OUFS	Operable Unit Feasibility Study
Proposed Plan	Plan presented to the public describing the preferred alternative for a site.
SAAD	Sacramento Army Depot
SARA	Superfund Amendment and Reauthorization Act of 1986
SRWTP	Sacramento Regional Wastewater Treatment Plant
TMV	Toxicity, Mobility, and Volume
USEPA	United States Environmental Protection Agency

TABLE 1
SUMMARY OF DETAILED ANALYSIS
OF GROUND WATER OUFs ALTERNATIVES

Assessment Criteria	Alternative No. 1 - No Action	Alternative No. 2 - Containment by Pumping, Air Stripping, Surface Discharge	Alternative No. 3 - Containment by Pumping, Air Stripping, Industrial Reuse
<u>Description</u>	No mitigating measures. Continued ground water monitoring.	Install extraction well system; Pump and treat using air stripping; Discharge to Morrison Creek; Ground water and performance monitoring.	Install extraction well system; Pump and treat using air stripping; Discharge to local industrial facility; Ground water and performance monitoring.
<u>Short-Term Effectiveness</u>	No significant risk from monitoring.	Low risk during construction.	Low risk during construction.
<u>Long-Term Effectiveness and Permanence</u>	Long-term health risks remain from ingestion of contaminated water from offsite production wells	No significant risk to public or environment would remain, once cleanup goals are attained.	No significant risk to public or environment would remain, once cleanup goals are attained.
<u>Reduction in Toxicity, Mobility, and Volume</u>	No treatment used.	The organic compounds are transferred to the air, but not destroyed unless vapor-phase carbon is used.	The organic compounds are transferred to the air, but not destroyed unless vapor-phase carbon is used.
<u>Implementability</u>	No technical impediments to implementation. Regulatory concurrence not probable.	Technologies used are readily available. About 12 months needed for construction.	Technologies used are readily available. About 12 months needed for construction. Negotiation with industrial user could delay implementation unless interim discharge to SRWTP is used.
<u>Compliance with ARARs</u>	Does not comply with ARARs.	Complies with ARARs, but does not meet statutory preference for treatment.	Complies with ARARs, but does not meet statutory preference for treatment.
<u>Overall Protection of Human Health and the Environment</u>	Does not provide protection. No mitigation of primary exposure pathway.	No significant health risk during construction and operation, except for air emission. No significant risk remains once cleanup goals are attained.	No significant health risk during construction and operation, except for air emission. No significant risk remains once cleanup goals are attained.
<u>Cost</u>	Capital \$ 51,000 Annual \$ 25,000 Present Worth \$288,000 Economic Life 30 years	Capital \$1,170,000 Annual \$ 242,000 Present Worth \$3,449,000 Economic Life 30 years	Capital \$1,345,000 Annual \$ 207,000 Present Worth \$3,299,000 Economic Life 30 years

TABLE 1
SUMMARY OF DETAILED ANALYSIS
OF GROUND WATER OUFs ALTERNATIVES
(CONTINUED)

Assessment Criteria	Alternative No. 4 - Containment by Pumping, UV Chemical Oxidation, Surface Discharge	Alternative No. 5 - Containment by Pumping, UV Chemical Oxidation, Industrial Reuse	Alternative No. 6 - Containment by Pumping, SRWTP Discharge
<u>Description</u>	Install extraction well system and treat using UV oxidation technology. Discharge to Morrison Creek. Ground water and performance monitoring. Low risk during construction.	Install extraction well system Pump and treat using UV chemical oxidation technology. Discharge to local industrial facility. Ground water and performance monitoring. Low risk during construction	Install extraction well system. Pump and discharge untreated water to sewer routed to SRWTP. Ground water and discharge monitoring. Low risk during construction.
<u>Short-Term Effectiveness</u>	No significant risk to public or environment would remain.	No significant risk to public or environment would remain, once cleanup goals are attained.	No significant risk to public or environment would remain, once cleanup goals are attained.
<u>Long-Term Effectiveness and Permanence</u>	Technology destroys volatile organic compounds without formation of residual by-products.	Technology destroys volatile organic compounds without formation of residual by-products.	Compounds are either removed during pure oxygen activated sludge process or levels reduced by dilution. No destruction of organics achieved.
<u>Reduction in Toxicity, Mobility, and Volume</u>	Only two vendors offer technology used, but they both have operating systems at other sites. About 12 months needed for construction.	Only two vendors offer technology used but they both have operating systems at other sites. About 12 months needed for construction. Negotiation with industrial user could delay implementation unless interim discharge to SRWTP used.	Easily implemented within 6 to 12 months. SRWTP has agreed to accept water.
<u>Implementability</u>	Complies with ARARs.	Complies with ARARs.	Complies with ARARs, but does not meet statutory preference for treatment.
<u>Compliance with ARARs</u>	No significant health risk during construction and operation. No significant risk remains once cleanup goals are attained.	No significant health risk during construction and operation. No significant risk remains once cleanup goals are attained.	No significant health risk during construction and operation. No significant risk remains once cleanup goals are attained.
<u>Overall Protection of Human Health and the Environment</u>	Capital \$1,530,000 Annual \$ 298,000 Present Worth \$4,341,000 Economic Life 30 years	Capital \$1,764,000 Annual \$ 264,000 Present Worth \$4,250,000 Economic Life 30 years	Capital \$1,316,000 Annual \$ 197,000 Present Worth \$3,177,000 Economic Life 30 years
<u>Cost</u>			

Welcome to the Sacramento Army Depot public meeting on the Proposed Plan for On-Site Ground Water Remediation

Would you like to be kept informed of the cleanup progress at Sacramento Army Depot by being placed on our mailing list. Yes ☐ No ☐

In order for us to gain an idea of who is here, please provide us with the following information.

Optional unless you would like to be placed on our mailing list.

Name _____

Affiliation _____

Address _____

Resident in area Yes ☐ No ☐

Do you have any questions about the proposed ground water cleanup method.

Yes ☐ No ☐

If yes, please write your questions here:

Did you voice this question at the public meeting. Yes ☐ No ☐

FOR YOUR INFORMATION

The attached page includes a few definitions of some of the terms that may be used during the meeting tonight. Feel free to tear it off and take it with you. We appreciate your input in tonight's meeting.

Tank 2



Fact Sheet • Tank 2

Record of Decision



State of California
Department of Toxic
Substance Control



The United States Army has prepared a Record of Decision (ROD) for the cleanup of soil surrounding an underground storage tank at the Sacramento Army Depot. The underground storage tank, which will be referred to as Tank 2, was used to store a variety of chemicals for 37 years. Over the years, the tank deteriorated, and some of the chemicals leaked out of the tank and into the soil surrounding the tank. The tank was removed in 1986, and concrete was placed over the area to prevent rain water from trickling through the soil and carrying the chemicals that leaked from the tank to groundwater. The ROD, which has been approved by the regulatory agencies (California Department of Toxic Substances Control, U.S. Environmental Protection Agency, Region 9, and the Central Valley Regional Water Quality Control Board), selects one of nine proposed clean up methods of implementation for the Tank 2 area. The nine methods were evaluated against the following criteria:

- 1 Overall protection of human health and the environment
- 2 Compliance with federal and state environmental laws
- 3 Long-term effectiveness and permanence
- 4 Short-term effectiveness
- 5 Reduction of toxicity, mobility, and volume through treatment
- 6 Feasibility of implementation
- 7 Cost effectiveness
- 8 State acceptance
- 9 Community acceptance

During a 30 day comment period in August of 1991, the surrounding community, elected officials, and the media were sent a newsletter, titled "Sacramento Army Depot Tank 2 Area", which gave a background on the site and outlined the nine proposed methods to clean up the area surrounding Tank 2. Through this newsletter and through advertisements run in local newspapers, the community, elected officials, and the media were invited to a community meeting held on August 20, 1991 to discuss and comment on the nine proposed methods. The U.S. Army has received comments from the community, or elected officials regarding the nine methods considered, none of which opposed or objected to the proposed cleanup method. Therefore, the method proposed meets the ninth evaluation criteria on the checklist - community acceptance. The Army selected a cleanup method that involves treatment of contaminated soil using soil ventilation. Air emissions will be controlled using carbon, and moisture removed from the soil will be treated by ultraviolet-hydrogen peroxide in the depot treatment system.

Soil ventilation with air emissions control and ultraviolet-hydrogen peroxide treatment of moisture removed from the soil met all of the evaluation criteria. The selected method will clean up chemicals in the soil to levels that protect the community and to levels that comply with federal, state, and local regulatory agency requirements.

Soil ventilation with air emissions control and ultraviolet-hydrogen peroxide treatment of the moisture removed from the soil can be broken down into four phases:

- The first phase, soil ventilation pulls air through the contaminated soil and draws out the air between the soil particles. Contaminants stored in the air between the soil particles as well as soil moisture are drawn out during this process.
- During the second phase, the contaminated air is cooled to condense and separate moisture from the air. This moisture will contain some contaminants, as will the dry air.
- The resulting contaminant and water mixture will then be treated at the Sacramento Army Depot's treatment plant, which is the third phase of the treatment process.
- During the fourth phase of treatment, the remaining dry air from the cooling process will be treated by running it through a bed of granular activated carbon. The carbon will adsorb (filter) the remaining contaminants in the air. The treated air will be released into the atmosphere, and the carbon will be transported to a facility where the contaminants are removed and treated.

Figure 1 illustrates the concept of soil ventilation with air emissions control and ultraviolet-hydrogen peroxide treatment of the moisture in the soil. Using this alternative, the U.S. Army hopes to clean up the Tank 2 area in 1992.

A complete history of cleanup efforts at the depot is available for public review at the following repositories:

California State University
Science & Technology Reference Department
2000 Jed Smith Drive
Sacramento, CA 95819

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, CA 95813

Phase I - Soil Ventilation Air is pulled through the contaminated soil and is drawn out from between the soil particles. Contaminants stored in the air between the soil particles, as well as soil moisture, are drawn out during this process.

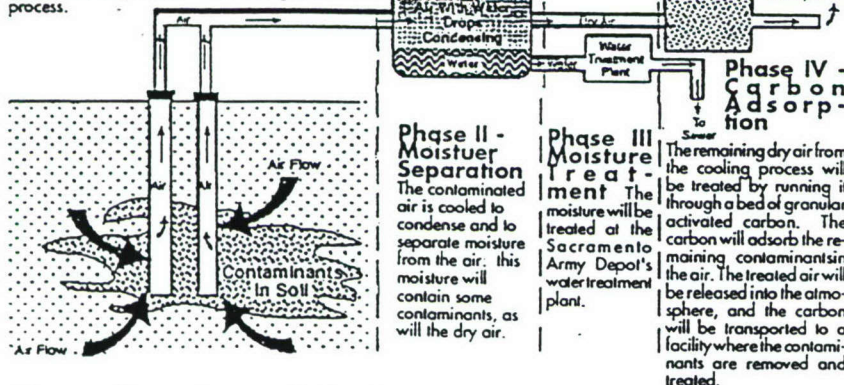


Figure 1 Illustrates the concept of soil ventilation with air emissions control and ultraviolet-hydrogen peroxide treatment of the moisture in the soil.

Richard Dyer, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

If you have any questions or concerns
about this fact sheet or any of the cleanup
activities at Sacramento Army Depot,
please write or call:

Richard Dyer, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
(916) 388-2324
or

Gordon Stephens
Department of Toxic Substance Control
10151 Croydon Way
Sacramento, CA 95827
(916) 855-7871
or
Marlon Mezquita
U.S. Environmental Protection
Region 9, Field Operations
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2393



SACRAMENTO ARMY DEPOT TANK 2 AREA

U.S. Army, Sacramento Army Depot - Sacramento, California

August 1991

SACRAMENTO ARMY DEPOT ANNOUNCES PLAN TO CLEAN UP SOIL

The U.S. Army (Sacramento Army Depot) is requesting public comments on the proposed cleanup plan at a location on the Sacramento Army Depot where a hazardous waste storage tank leaked and contaminated underlying soil. This contaminated area is referred to as the Tank 2 area. The proposed plan for the site is preliminary, and the Army encourages you to comment on all of the alternatives described in this fact sheet during the public comment period, August 19 through September 18, 1991.

The Army intends to clean up the Tank 2 area so that the public is not exposed to toxic chemicals from the area. The Army has considered over 70 cleanup alternatives including soil ventilation, soil washing, incineration, low temperature desorption, and surface aerobic biodegradation. The Army's preferred method for cleaning up the contaminated soil is treatment by soil ventilation with air emissions control and ultraviolet-hydrogen peroxide treatment of the moisture normally present in the soil. This alternative is preferred because it provides for permanent on-site treatment of contaminated soil with air emissions control. It is intended to be a permanent/final soil remedy.

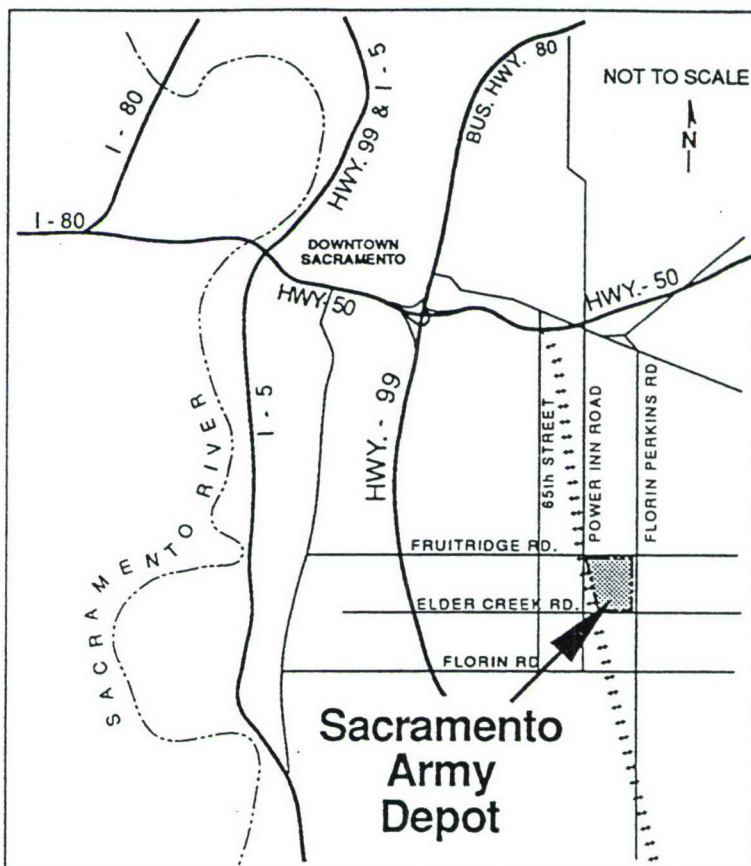


Figure 1: Area Map

The Environmental Protection Agency (EPA), the Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (CVRWQCB) have overseen the study to evaluate the cleanup alternatives, referred to as a feasibility study, which led to the selection of this proposed action plan. The studies that identified the extent of contamination in the Tank 2 area, the potential risks posed by the contaminants, and evaluated remedial alternatives,

are documented in the Operable Unit Feasibility Study report. The report is available for public review, along with other related documents, at the information repositories listed on page 11 of this fact sheet.

SITE BACKGROUND

The Sacramento Army Depot (SAAD) is located at 8350 Fruitridge Road in Sacramento, California, approximately seven miles southeast of the city's central business district (see

Figure 1). SAAD was established at its present location in 1945 to receive, store, issue, and maintain electronic supplies and commodities. Operations which had led to the current contamination at SAAD involved the management of hazardous materials, including organic solvents, oils and grease, fuels, lubricants, caustic solutions, and metal-plating solutions.

Tank 2 was located in the northwest corner of the SAAD facility approximately ten feet south of Building 320 (see Figure 2). Tank 2 was a 1000-gallon underground storage tank used by SAAD to store waste solvents until approximately 1982. In 1982 the tank was emptied, and in 1986 it was excavated and removed. Upon removal, Tank 2 showed signs of deterioration. The soil contamination in the Tank 2 Area was confirmed through sampling and analysis.

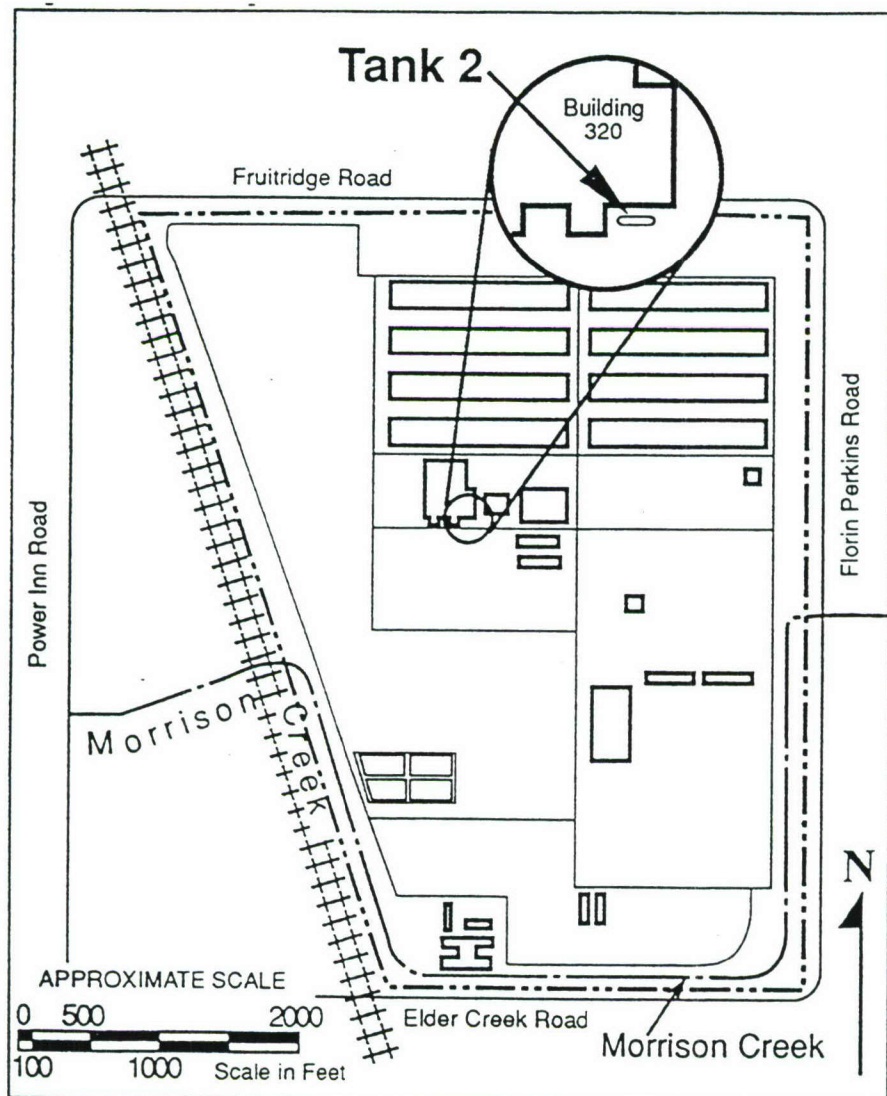
SCOPE AND ROLE OF THE OPERABLE UNIT ACTION

The Army and the regulatory agencies have agreed to address certain areas where hazardous materials were managed at the SAAD facility as separate "operable units" in order to speed up the clean-up activities at each area. This approach allows the Army to clean up the operable units with the most contamination first, thereby reducing the risks to public health. Public comment was conducted for the first "unit", which was on-site ground water pumping and treatment, in 1989. Ground water under the southwest corner of the SAAD facility is currently being cleaned up based on the 1989 Record of Decision. Tank 2 is the second area at SAAD to reach the public comment phase of the clean-up process. Two additional operable units, the Oxidation Lagoons and the Burn Pits, are also high priority sites. The Oxidation Lagoons site is scheduled to reach the public comment phase and be cleaned up under a Removal Action immediately after the Tank 2 site. The Burn Pits site is scheduled to reach the public comment phase within the next year. Other areas of contamination will be addressed in future plans. Also, there will be a final record of decision in a few years which will comprehensively address all of the contaminated areas at SAAD.

SUMMARY OF CONTAMINATION IN THE TANK 2 AREA

The U.S. Army and regulatory agencies have been investigating soil and ground water at Tank 2 since 1986. The investigation showed that soil in a ten to fifteen feet wide circle around Tank 2 has been contaminated by

Figure 2: Site Map, Tank 2 Area



volatile organic compounds, which are commonly referred to as solvents. Most of the contaminants are located from nine to fifteen feet below ground surface.

The two volatile organic compounds most often detected in soil at the Tank 2 Area are ethylbenzene and xylene. Several other volatile organic

compounds, including tetrachloroethene and 2-butanone, were detected occasionally at relatively low concentrations. Ground water at the site has been monitored since 1990. Currently, Tank 2 is not believed to be a source of ground water contamination. Any ground water contamination in this area will be addressed separately.

ASSESSMENT OF HEALTH RISKS

Because chemicals are present in the soil, a health risk assessment was conducted in the Tank 2 area to assess the current and future risks to public health. The health risk assessment evaluates which chemicals found in the area could cause harm-

Table 1
Summary of Potential Risks Posed By Area Chemicals

Potential Exposure Pathways	Chemicals of Concern	Estimated Worst-Case Ground Water Concentration in Parts Per Billion	Potential Excess Cancer Risk	Potential Non-Cancer Health Hazard Index
Future On-Site Resident				
Drinking Shallow Ground Water *	Benzo (a) Anthracene	0.005	1.7 in 1,000,000	9.1
	Benzo (g, h, i) Perylene	0.005	1.7 in 1,000,000	
	2-Butanone	16,000		
	Chrysene	0.008	2.7 in 1,000,000	
	Dieldrin	0.025	1.1 in 100,000	
	Heptachlor Epoxide	0.21	5.5 in 100,000	
	Indeno (1, 2, 3-c, d) Pyrene	0.006	2.0 in 1,000,000	
	Tetrachloroethene	290	4.2 in 10,000	
Breathing Vapors from Ground Water	2-Butanone	16,000	2.7 in 100,000	5.1
	Ethylbenzene	200		Less Than 1.0
	Tetrachloroethene	290		
Direct Contact with Soil	DDE, DDT, Dieldrin, Tetrachloroethene, Xylenes		Less Than 1 in 1,000,000	Less Than 1.0
Soil Ingestion	DDE, DDT, Dieldrin, Tetrachloroethene, Xylenes		Less Than 1 in 1,000,000	Less Than 1.0
Future Off-Site Resident				
Drinking Shallow Ground Water **	Tetrachloroethene	1.8	2.7 in 1,000,000	Less Than 1.0
Breathing Vapors from Ground Water	Tetrachloroethene	1.8	Less Than 1 in 1,000,000	Less Than 1.0
	2-Butanone			Less Than 1.0
	Ethylbenzene			Less Than 1.0

* Twenty-three chemicals were evaluated for health effects. In addition to the chemicals of concern listed, these included anthracene, benzoic acid, DDE, DDT, dibenzo(a,h)anthracene, 2,4-dimethylphenol, ethylbenzene, fluoranthene, 2-methylnaphthalene, 4-methylphenol, naphthalene, phenanthrene, phenol, pyrene, and xylenes. Only those chemicals with concentrations estimated to present a potential health concern are listed as chemicals of concern.

** The same twenty-three chemicals were evaluated for the on-site and off-site residents

ful effects on human health and the environment if the area were not cleaned up. This worst-case risk estimate is then used to develop clean-up goals for this area so that public health will be protected.

One of EPA's primary concerns is that human exposure to the area chemicals may cause cancer or other harmful health effects. A cancer risk level of 1-in-1,000,000 is used in developing soil cleanup goals. This risk level means that a hypothetical individual exposed to the maximum amount of contaminants at Tank 2 over a 70-year lifetime might have a one-in-a-million increased chance of contracting cancer. Additionally, EPA uses a number called a Hazard Index to help arrive at soil clean-up goals for noncarcinogenic contaminants. For each chemical, a Hazard Index is calculated in accordance with procedures established by EPA. A Hazard Index of greater than 1.0 indicates a potential health threat.

The health risk assessment analyzed several ways that the public could

be exposed to contaminants at Tank 2 in the future. These are summarized in Table 1. There are no known current exposures at Tank 2 since a concrete slab was placed over the area, effectively preventing direct contact with the soil or infiltration of rainwater.

SUMMARY OF CLEANUP GOALS

The soils in the Tank 2 Area will be cleaned up to levels that are protective of public health and comply with federal, state, and local standards. Area specific cleanup goals for Tank 2 soils are summarized in Table 2. These cleanup goals meet EPA national goals and California State requirements. The national goal is to reduce excess cancer risks to between 1-in-10,000 to 1-in-1,000,000 upon completion of a remedial action. However, the Army's goal is to clean up the area to come closer to the more stringent goal of 1-in-1,000,000. For non-cancer health effects, a Hazard Index of greater

than 1.0 represents an unacceptable level of risk to the EPA and to the Army.

Cleanup of chemicals to the levels listed in Table 2 would reduce the potential excess cancer risk for future on-site residents to meet the national goal and would reduce the potential non-cancer Health Hazard Index to one. A discussion of how the cleanup goals in Table 2 relate to the chemicals of concern listed on Table 1 is presented below.

Primary Chemicals of Concern

These are the chemicals that were found in Tank 2 area soils that pose an unacceptable level of risk to future on-site residents using the on-site ground water. These two chemicals are tetrachloroethene and 2-butanone. Tetrachloroethene and 2-butanone are mobile in soil. Therefore, they could migrate through soil to ground water. These chemicals will, therefore, be cleaned up to levels that do not pose a threat to users of site ground water. The proposed cleanup goal for tetrachloroethene is 0.2 parts per million. The maximum potential cancer risk at this level would be 4.8-in-1,000,000, which meets the EPA national goal and is also close to the 1-in-1,000,000 goal set by the Army. The proposed minimum cleanup goal for 2-butanone is 1.2 parts per million. This level results in a Hazard Index of one.

Secondary Chemicals of Concern

Secondary chemicals of concern are those that would be a concern if they reached ground water. These chemicals are: benzo(a)anthracene,

Table 2

Contaminant Concentrations & Cleanup Goals In Soil

Contaminant [†]	Average Area Levels (ppm*)	Maximum Area Levels (ppm*)	Cleanup Goals (ppm*)	Percent Reduction In Health Risks
2-butanone	**	15	1.2	92
ethylbenzene	107	2,300	6	97
total xylenes	645	11,000	23	98
tetrachloroethene	9	39	0.2	99

*ppm = Parts per million

** = This compound was not found frequently enough to calculate an area average. To be conservative, the risk assessment assumed that the average level of this compound is 18 ppm, which is higher than the maximum level that was detected.

† = Only contaminants with cleanup goals are included in this table.

benzo(g,h,i)perylene, chrysene, and indeno(1,2,3-c,d)-pyrene. However, these chemicals cling (adsorb) onto the soil and are highly unlikely to move to ground water. To be conservative, the risk assessment assumed that these chemicals could move to ground water. The resulting calculated excess cancer risk would be 1.7 to 2.7-in-1,000,000 for an on-site resident drinking the water. This level of risk is within the EPA safe protective risk range. Therefore, a specific cleanup goal was not estab-

lished for these chemicals. However, a benefit of the preferred alternative is that some cleanup of these chemicals will be achieved.

Two pesticides were detected in area soils. Dieldrin was detected in two of the 74 samples collected and heptachlor epoxide was detected in only one of the 74 samples from the area. To be conservative, the health risk assessment assumed that these chemicals exist throughout the Tank 2 area rather than just at the places

where they were detected. Under these conservative assumptions, an excess cancer risk of 1.1 to 5.5-in-100,000 would be expected for on-site residents who drink the water from under Tank 2. This level of risk is within the EPA safe protective risk range. Since these pesticides are not prevalent at Tank 2 and the calculated concentrations in ground water are expected to meet State and federal drinking water standards, specific cleanup goals were not developed for these chemicals.

Figure 3: The Nine Selection Criteria

How a Remedy is Selected & Implemented

Evaluation Criteria

The Army, in conjunction with involved regulatory agencies and the public, will select a clean-up alternative for the site based on nine criteria used to evaluate the alternatives. The evaluation criteria have been developed to address legal requirements, as well as technical and policy considerations that have proven to be important for selecting clean-up alternatives.

Each alternative is assessed against the nine evaluation criteria described below. The results of this assessment are used to compare the alternatives and identify the key tradeoffs among the alternatives. This approach is designed to provide decision makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for a site and satisfy legal requirements. The nine criteria are summarized in the box to the right.

The Nine Criteria:

Short Term Effectiveness

Address the period of time needed to complete the remedy, and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until the clean-up goals are achieved.

Long Term Effectiveness & Performance

Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once clean-up goals have been met.

Reduction of Toxicity, Mobility & Volume Through Treatment (TMV)

Refers to the anticipated ability of a remedy to reduce the toxicity, mobility and volume of the hazardous components present at the site.

Implementability

Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

Cost

Evaluates the estimated capital, operation and maintenance costs of each alternative.

Overall Protection of Human Health and the Environment

Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Site remediation should comply with federal and state laws which apply to the project. This criterion addresses whether or not a remedy will meet all ARARs of federal and state environmental statutes and/or provide grounds for invoking a waiver.

State Acceptance

Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

Community Acceptance

Indicates whether community concerns are addressed by the remedy and whether the community has a preference for a remedy. Public comment is an important part of the final decision.

TABLE 3: COMPARISON OF REMEDIAL ALTERNATIVES

ALTERNATIVE	COST	TIME	ADVANTAGES	DISADVANTAGES
1. No Action	\$0	None	-No Capital Cost	-Leaves contaminated soil in place
2. Soil Ventilation, Air Emission Control, Entrained Water Treatment by UV/H ₂ O ₂ -with Thermal Vapor Treatment	*\$483,000	6 months	-Permanent destruction of contaminants -No expected transfer of contaminants from soil to another media such as air, water, or carbon -Target area of remediation larger than area of contamination -Reduced transportation risks for on-site water treatment -No excavation, thus no release of contaminant into air -Low cost	-Considered to be an innovative technology, requiring stringent monitoring of emissions. Potential cost of monitoring not yet known
-with Gas Phase Carbon Adsorption	\$615,000	6 months	-Target area of remediation larger than area of contamination -Reduced transportation risks for on-site water treatment -No excavation, thus no release of contaminant into air	-Contaminants transferred to carbon -Potential of breakthrough of carbon could result in contaminant release -Higher cost than Thermal Vapor Treatment
-with Vapor Recovery/Condensation	\$763,000	6 months	-Target area of remediation larger than area of contamination -Reduced transportation risks for on-site water treatment -No excavation, thus no release of contaminant into air	-Contaminants transferred to water -Maintenance requirement -Need trained operator -Higher cost than Thermal Vapor Treatment
3. Soil Ventilation, Air Emissions Control, Off-Site Water Disposal -with Thermal Vapor Control	\$483,000	6 months	-Same as the advantages for the corresponding air emissions control listed under Alternative 2, except transportation risks will not be reduced	-Same as the disadvantages for the corresponding air emissions control listed under Alternative 2, plus increased transportation risks associated with transport of contaminated water
-with Gas Phase Carbon Adsorption	\$615,000	6 months	-Low volume of water produced by Thermal Vapor Control and Gas Phase Carbon Adsorption options will not increase cost of option	
-with Vapor Recovery/Condensation	\$766,000	6 months		
4. Excavation, Soil Washing, Activated Carbon Vapor Treatment, Off-Site Liquid Treatment, Backfill	\$666,000	6 months		-Contaminants transferred to wash solution and carbon. Potential air emissions during excavation -Potential of breakthrough in carbon resulting in contaminant release -Increased transportation risks associated with transport of contaminated wash solution -Implementability
5. Excavation, Incineration, Backfill	\$2,500,000	3 months	-Permanent destruction of contaminants	-Potential air emissions during excavation -High cost -Implementability
6. Excavation, Low Temperature Desorption, Air emission Control, Entrained water treatment by UV/H ₂ O ₂ -with Gas Phase Carbon Adsorption	\$764,000	3 months	-Reduced transportation risks since water is treated on-site	-Contaminants transferred to carbon -Potential of breakthrough of carbon resulting in contaminant release -Potential air emissions during excavation -Higher cost
-with Incineration	\$771,000	3 months	-Reduced transportation risks due to on-site water treatment -Permanent destruction of contaminants	-Potential air emissions during excavation -Higher cost -Implementability
7. Excavation, Low Temperature Desorption, Air Emissions Control, Off-Site Entrained Water Treatment, Backfill -with Gas Phase Carbon Adsorption	\$768,000	3 months		-Same as disadvantages for corresponding option under Alternative 6, plus increased transportation risks associated with transport of contaminated water -Implementability
-with Incineration	\$775,000	3 months	-Same as Incineration in Alternative 6, except transportation risks will not be reduced	
8. Excavation, Surface Aerobic Biodegradation, Backfill	\$700,000	3 months	-On-site treatment. Reduced transportation risks due to no off-site treatment -Low Cost	-Transfer of contaminants from soil to air during excavation and tilling of soil -Requires large on-site working area -Implementability

* This cost may increase due to air monitoring requirements, but the cost of monitoring is not yet known.

However, a benefit of the preferred alternative is that some cleanup of these chemicals will also be achieved.

Other Target Chemicals

These are chemicals that were found very frequently or at high concentrations, but whose concentrations pose a very low health risk. Two chemicals were detected consistently in samples from the Tank 2 area. These two chemicals are ethylbenzene and xylene. These are the same chemicals that are often associated with gasoline contaminated soils. The average area soil concentrations of these two chemicals by themselves do not pose a health risk to future on-site or off-site residents. However, cleanup levels were developed for ethylbenzenes and xylenes because they were detected frequently and at higher concentrations than other chemicals in the area.

As the area clean up proceeds, soil samples will be taken to confirm that cleanup goals have been met. EPA and DTSC will review the data to assure that the final cleanup levels are acceptable.

EVALUATION OF CLEAN-UP ALTERNATIVES

During the process of developing a proposed plan for soil cleanup, 75 alternatives were evaluated. Sixty-seven alternatives did not satisfy one or more of the nine evaluation criteria (see Figure 3 for a description of the criteria). The remaining eight alternatives are summarized in Table 3 and are described below.

1. No Action: This alternative would leave contaminated soils in place. This alternative is retained as a reference point for comparison with other alternatives, although it does not satisfy the nine criteria listed in Figure 3. This alternative is not preferred because it is not protective of human health and the environment since no cleanup takes place.

Treatment Cost: \$0

Treatment Time: Not Applicable

2. Soil Ventilation, Air Emissions Control, Entrained Water Treatment by Ultraviolet-Hydrogen Peroxide:

This alternative would use a soil ventilation system to clean up the soil in place without excavation. A soil ventilation system pulls air through the contaminated soil and withdraws soil vapors that carry the contaminants out of the soil. The contaminants can then be removed from the soil vapors or destroyed by an air emissions control device. Three methods for controlling air emissions are: 1) *Thermal Vapor Treatment* -- burning of the contaminants at low temperature. EPA considers this to be an innovative technology which would require stringent monitoring of air emissions, including dioxins. The cost for air monitoring is currently unknown and is not included in the estimated treatment cost at this time; 2) *Gas Phase Carbon Adsorption* -- granular activated carbon that adsorbs the contaminants found in the soil vapor. Once the carbon has adsorbed as much as it can hold, it is transported to a facility where the contaminants are removed and treated so that the carbon can be re-used; 3) *Vapor Recovery* -- a refrigeration

cycle which turns the contaminants and the moisture in the vapors into a liquid. The condensed liquid consists of a mixture of organics and water that will be treated in the Ultraviolet-Hydrogen Peroxide water treatment unit located on the SAAD site. This unit is part of the ground water cleanup being performed under the Record of Decision signed in 1989.

Some of the moisture normally present in the soil may be removed with the extracted vapor. This "entrained" water must be separated from the soil vapor prior to treating the air. The separated water will be treated in the Ultraviolet-Hydrogen Peroxide water treatment plant located on the SAAD facility.

Approximate Treatment Cost:

- With Thermal Vapor Control Unit: \$483,000
- With Gas Phase Carbon Adsorption: \$615,000
- With Vapor Recovery/Condensation: \$763,000

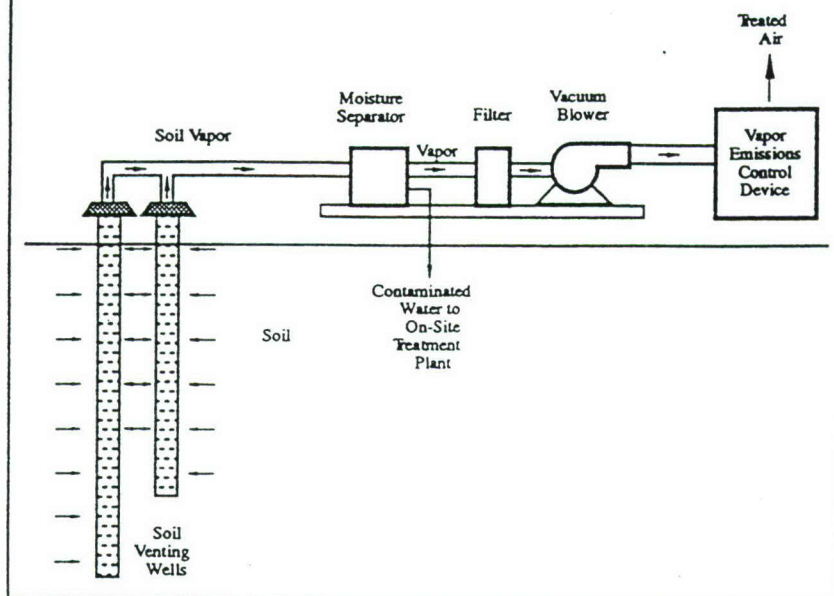
Approximate Treatment Time: 6 months

3. Soil Ventilation, Air Emissions Control, Off-Site Water Disposal:

This alternative is the same as Alternative 2 except that any liquid waste generated would be transported and treated off site. The contaminated liquid would have to be transported via a public route. Alternative 2 is preferable to Alternative 3 because hazardous liquids would be treated on site, thereby reducing risks associated with transporting hazardous materials. The volume of water pro-

Figure 4

The Army's Preferred Alternative for Soil Cleanup



duced if Thermal Vapor Control or Gas Phase Carbon Adsorption are used is expected to be small and should not affect the treatment cost.

Approximate Treatment Cost:

- With Thermal Vapor Control Unit: \$483,000
- With Gas Phase Carbon Adsorption: \$615,000
- With Vapor Recovery/Condensation: \$766,000

Approximate Treatment Time:
6 months

4. Excavation, Soil Washing, Activated Carbon Vapor Treatment, Off-Site Liquid Treatment, Backfill:

This alternative would involve the excavation of contaminated soils followed by soil washing to remove the contaminants from the excavated soil. The decontaminated soil would then be backfilled in the

excavation. The contaminated wash liquid would be transported and treated off site. The contaminated liquid would have to be transported via a public route. Vapor generated during the washing process would be treated in a gas phase carbon adsorption unit similar to the one described in Alternative 2. The used carbon would be transported off site and treated. In addition to hazards associated with the transport of hazardous materials off site, this alternative creates the potential for uncontrolled air emissions during excavation of the soil since volatile organic compounds can be released as vapors from the disturbed soil. Implementation of the excavation option would be more difficult because of site specific factors such as underground utilities, building foundations and structures, and the potential impact on ongoing operations.

Approximate Treatment Cost:
\$666,000

Approximate Treatment Time:
6 months

5. Excavation, Incineration, Backfill:

This alternative would involve the excavation of contaminated soils followed by on-site incineration of the excavated soils. Incineration would burn off the contaminants in the soils at high temperatures. The products of the incineration are carbon dioxide, water and nitrous oxides. The decontaminated soils would be placed back into the excavation. The cost of this alternative is substantially higher than the costs of the other seven alternatives. This alternative also creates the potential for uncontrolled air emissions during excavation of contaminated soils. Implementation of the excavation option would be more difficult because of site specific factors such as underground utilities, building foundations and structures, and the potential impact on ongoing operations.

Approximate Treatment Cost:
\$2,500,000

Approximate Treatment Time:
3 months

6. Excavation, Low Temperature Desorption, Air Emissions Control, Entrained Water Treatment by Ultraviolet-Hydrogen Peroxide, Backfill:

This alternative would involve the excavation of contaminated soils and on-site low temperature desorption of the soil. The low temperature desorption process involves heating the contaminated soil to approximately 400 degrees Fahrenheit. The contaminants in the soil are transferred into air at this temperature and are transported to a condenser.

The condenser turns vapors into a liquid that consists of a mixture of organic compounds and water that would then be treated in the existing Ultraviolet-Hydrogen Peroxide Water Treatment Plant located on the SAAD site, as described in Alternative 2. It also produces gasses that will be routed through an air emissions control device (either a gas phase carbon adsorption unit or a thermal vapor treatment unit, as described in the previous alternatives). The decontaminated soils would then be placed back into the excavation.

This alternative could potentially create uncontrolled air emissions during excavation. In addition, the low temperature desorption process is not commonly used so its capabilities are not as well documented as the

capabilities of other processes. Implementation of the excavation option would be more difficult because of site specific factors such as underground utilities, building foundations and structures, and the potential impact on ongoing operations.

Approximate Treatment Cost:

- With Gas Phase Carbon Adsorption: \$764,000
- With Thermal Vapor Control Unit: \$771,000

Approximate Treatment Time:
3 months

7. Excavation, Low Temperature Desorption, Air Emissions Control, Off-site Treatment of Entrained

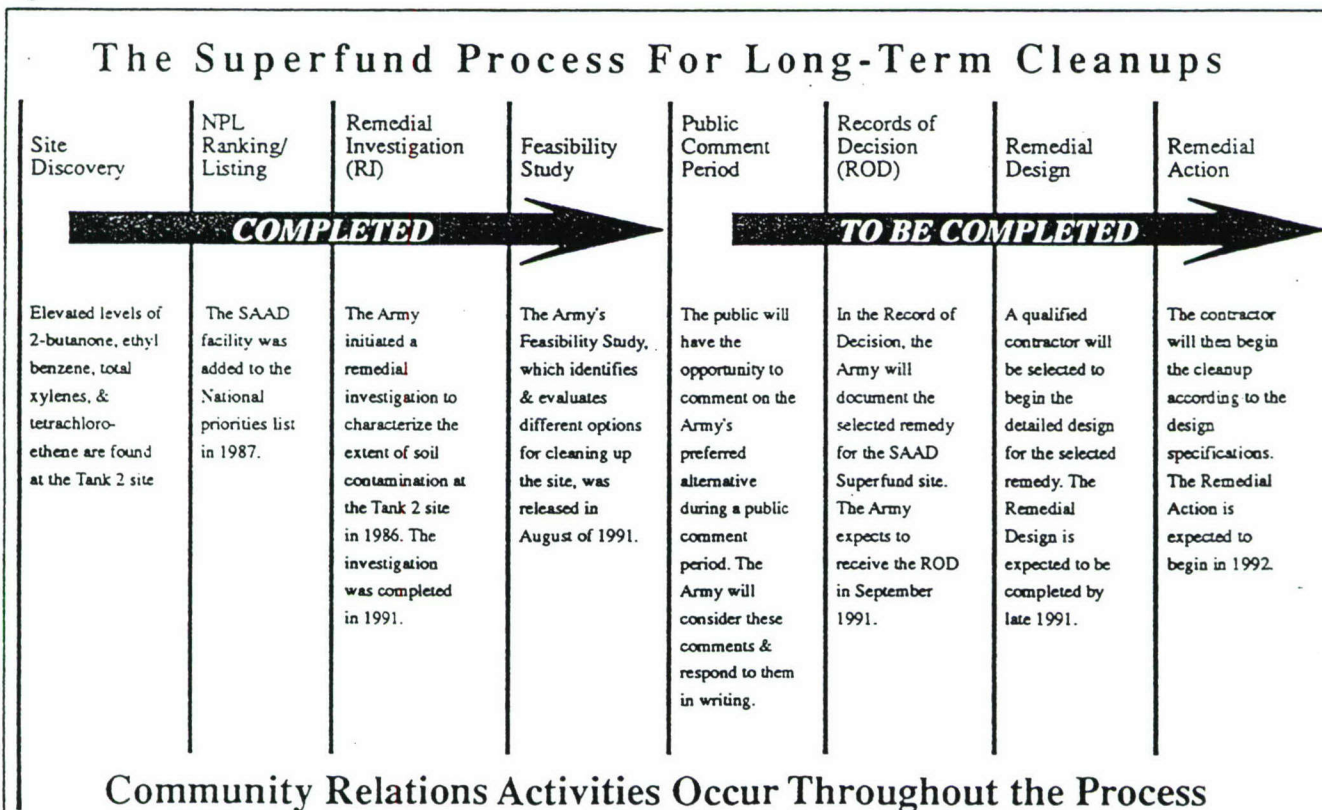
Water Backfill: This alternative is the same as Alternative 6 except the water resulting from the low temperature desorption process would be transported and treated off site. The contaminated liquid would have to be transported via a public route. Implementation of the excavation option would be more difficult because of site specific factors such as underground utilities, building foundations and structures, and the potential impact on ongoing operations.

Approximate Treatment Cost:

- With Gas Phase Carbon Adsorption: \$768,000
- With Thermal Vapor Control Unit: \$775,000

Approximate Treatment Time:
3 months

Figure 5



8. Excavation, Surface Aerobic Biodegradation, Backfill:

This alternative would involve the excavation of contaminated soils. The excavated soil would then be placed on a liner to protect the underlying soil. Microorganisms present in site soils would break down the contaminants into carbon dioxide, water, and harmless salts. The soils would be fertilized, tilled, and irrigated to promote microbe growth and speed up the chemical breakdown. The decontaminated soils would then be placed back into the excavation. This alternative would be difficult to implement due to lack of space at the site. This alternative also creates the potential for uncontrolled air emissions during excavation and tilling of the soil. Implementation of the excavation option would be more difficult because of site specific factors such as underground utilities, building foundations and structures, and the potential impact on ongoing operations.

Approximate Treatment Cost:
\$700,000

Approximate Treatment Time:
3 months

**PREFERRED ALTERNATIVE
FOR SOIL CLEAN-UP**

The Army is proposing Alternative 2 for the cleanup of soil contamination (see Figure 4). This alternative is protective of human health and the environment, complies with all Applicable, Relevant and Appropriate Regulations (ARARs), which include Federal, State and local regulations, provides short-term effectiveness, provides long-term protection, reduces the mobility and volume of soil contaminants, is technically practical, and is cost effective. The preferred alternative provides the best balance with respect to the nine evaluation criteria.

The major advantages of Alternative 2 are that hazardous materials do not need to be transported off site, with the exception of used carbon (which is a solid that can be safely trans-

ported), and the contaminated soils will not be excavated (which could result in contaminants escaping to the air).

Alternative 2 lists three methods for air emissions control. These methods are thermal vapor control, gas phase carbon adsorption, and vapor recovery/condensation. These three air emissions control devices are considered the "best available control technologies" (BACT). This means that these three alternatives have been successfully tested and used at other sites. These three devices will comply with agency requirements, and reduce cancer risk to less than 1-in 1,000,000. Since each technology will work equally well, the technology selected will be based on cost, contractor recommendation, and public input. The Army will notify you of the final selection.

FUTURE ACTIVITIES AT THE SAAD SITE

After the public comment period, the Army expects to prepare a Record of Decision that will select a clean-up alternative which satisfies the regulatory agencies and the community. The Record of Decision will establish the remedial action requirements and cleanup schedule. EPA and the State will be overseeing work by the Sacramento Army Depot during the design and implementation of the cleanup. If the chosen technologies fail to meet the expectations set forth in the Record of Decision and a different clean up technology is proposed, the Army will notify the regulatory agencies and the community in accordance with the requirements mandated in the Superfund Law. The Superfund Process is displayed in Figure 5.

INFORMATION REPOSITORIES

The information repositories include site-related documents, including the clean-up plan for Tank 2. The information repositories are available for public review at:

CALIFORNIA STATE UNIVERSITY
SACRAMENTO LIBRARY
2000 JED SMITH DRIVE
SACRAMENTO, CA 95819
(916) 278-6291

SACRAMENTO ARMY DEPOT
VISITOR CONTROL BUILDING
8350 FRUITRIDGE ROAD
SACRAMENTO, CALIFORNIA 95813-5052

FOR FURTHER INFORMATION

The Superfund program places a high value on community input in addressing hazardous clean-ups of Superfund sites. Your comments are invited and encouraged. If you have any questions or concerns about the clean-up activities at Sacramento Army Depot, please direct them in writing to one of the following offices:

RICHARD R. DYER
PUBLIC AFFAIRS OFFICE
SACRAMENTO ARMY DEPOT
8350 FRUITRIDGE ROAD
SACRAMENTO, CA 95813-5012
(916) 388-2324

PATRICK CHRISTMAN
CHIEF, ENVIRONMENTAL DIVISION
SACRAMENTO ARMY DEPOT
8350 FRUITRIDGE ROAD
SACRAMENTO, CALIFORNIA 95813-5052

VANCE FONG
PROJECT MANAGER
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX-H-8-4
75 HAWTHORNE STREET
SAN FRANCISCO, CALIFORNIA 94105

GORDON STEPHENS
PROJECT MANAGER
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
10151 CROYDEN WAY
SACRAMENTO, CALIFORNIA 95827

MICHAEL MOSBACHER
PROJECT MANAGER
REGIONAL WATER QUALITY CONTROL BOARD
3443 ROUTIER ROAD
SACRAMENTO, CA 95827

**OPPORTUNITIES FOR
COMMUNITY INVOLVEMENT**

Public Comment Period:

During the public comment period you are encouraged to comment on the Tank 2 cleanup alternatives at Sacramento Army Depot. Comments may be submitted either orally or in writing during the community meeting, or written comments may be sent to: Richard R. Dyer, Public Affairs Office, Sacramento Army Dept, 8350 Fruitridge Road, Sacramento, CA 95813-5012. Mr. Dyer can be reached at (916) 388-2324.

Community Meeting

You are encouraged to attend an upcoming meeting regarding the Tank 2 cleanup. The meeting will be held at the U.S. Army Reserve Center, 9376 Fruitridge Road (corner of Fruitridge and Florin-Perkins Road) in Sacramento, at 7:00 p.m. on August 20, 1991. At this meeting, EPA representatives involved in the project will describe the cleanup methods evaluated and EPA's preferred cleanup plan. Community members will also have the opportunity to ask questions and comment on the alternatives.

**INSTALLATION / RESTORATION PROGRAM
SACRAMENTO ARMY DEPOT**

Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

Oxidation Lagoons

Oxidation Lagoons FACT SHEET

Sacramento Army Depot • January 11, 1993



The United States Army has prepared a Record of Decision (ROD) for the cleanup of soil at the Oxidation Lagoons. The Oxidation Lagoons area includes four lagoons, three drainage ditches, and a portion of Old Morrison Creek.

Over a period of 22 years, the Oxidation Lagoons received wastewater from most of the depot industrial wastewater generating operations. A majority of the wastewater routed to the Oxidation Lagoons originated from metal plating operations and, therefore, contained diluted metals. When the four oxidation Lagoons became full, overflow wastewater would typically drain from the former lagoons to Old Morrison Creek by way of the drainage ditches.

California Environmental Protection Agency-Department of Toxic Substances Control and The Central Valley Regional Water Quality Control Board), selects one of five proposed clean up methods for implementation at the Oxidation Lagoons area. Each of the five methods were evaluated against the following criteria:

1. Overall protection of human health and the environment;
2. Compliance with federal and state environmental laws;
3. Long term effectiveness and performance;
4. Short term effectiveness;
5. Reduction of toxicity, mobility & volume of affected soils through treatment;

surrounding the Oxidation Lagoons.

Through invitations and advertisements run in local newspapers, the community, elected officials, and the media were invited to a community meeting held on May 27, 1992 to discuss and comment on the five proposed methods.

The U.S. Army received comments from the community and elected officials regarding the five methods considered, none of which opposed or objected to the proposed cleanup method. Therefore, the method proposed met the ninth evaluation criteria on the checklist - community acceptance.

The Army selected a cleanup method that

during excavation will be controlled using water or foam sprays.

■ During the second phase, the excavated soil is treated in on-site washing units which will remove metals from the soil by mixing with washing agents in a series of treatment operations.

■ Samples of the washed soil are periodically collected and analyzed to evaluate the effectiveness of the cleanup. Clean soil will be put back into the excavation.

■ Samples of treatment liquids used to wash the soil particles will be analyzed to assess their quality. These liquids will be discharged to the sanitary sewer after demonstrating compliance with appropriate sewer use permit conditions.

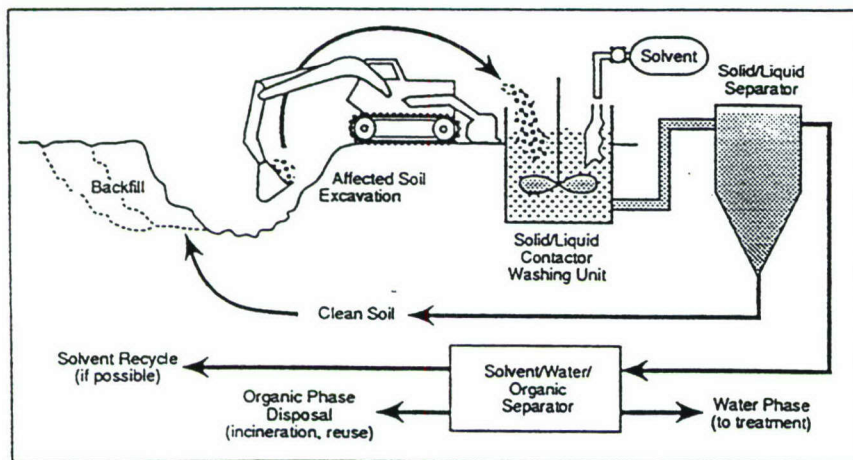
■ Certain treatment liquids that are not acceptable for either sanitary sewer discharge or recycling within the treatment process will be analyzed and disposed off-site at a selected facility.

A complete history of cleanup efforts at the depot is available for public review at the following repositories:

California State University
Science & Technology Reference
Department
200 Jed Smith Drive
Sacramento, CA 95819

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, CA 95813

George Sim Community Center
6207 Logan Street
Sacramento, CA 95820



Old Morrison Creek is the name given to the section of Morrison Creek that originally flowed through the depot. Because of flooding, part of Morrison Creek was diverted to flow around the southern, outside portion of the depot facility. Presently, Old Morrison Creek, the four Oxidation Lagoons, and the three drainage ditches are dry and not in use.

The ROD, which has been approved by the regulatory agencies (United States Environmental Protection Agency - Region 9,

6. Potential for Implementation;
7. Cost effectiveness
8. State acceptance
9. Community acceptance

During a 30 day comment period held in May and June of 1992, business and residents in the community surrounding the depot, elected officials, and the media were sent a newsletter, titled "Sacramento Army Depot Oxidation Lagoons Site", which gave a background on the site and outlined the five proposed methods to clean up the area

of the evaluation criteria. The selected method has been designed to clean up the soil to levels that protect the community and comply with federal, state and local regulatory agency requirements.

This excavation with soil washing will be carried out as a series of phased operations:

■ In the first phase, the soil is excavated from the Oxidation Lagoons site, which includes two drainage ditches and portions of Old Morrison Creek. Dust created

Roxanne Yonn, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

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If you have any questions or concerns
about this fact sheet or any of the cleanup
activities at Sacramento Army Depot, please
write or call:

**Roxanne Yonn,
Public Affairs Office**
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
(916) 388-2324 -or-

**Barbara Marcotte,
Calif. Environmental Protection Agency**
Department of Toxic Substance Control
10151 Croydon Way
Sacramento, CA 95827
(916) 255-3747 -or-

**Marlon Mezquita,
U.S. Environmental Protection Agency**
Region 9, Field Operations
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2393

SACRAMENTO ARMY DEPOT OXIDATION LAGOONS SITE



U.S. Army, Sacramento Army Depot - Sacramento, California

May 1992

SACRAMENTO ARMY DEPOT ANNOUNCES PLAN TO CLEAN UP SOIL

The U.S. Army (Sacramento Army Depot) is requesting public comments on the Proposed Plan for cleaning up the Oxidation Lagoons site at Sacramento Army Depot. The Proposed Plan for the Oxidation Lagoons site is preliminary, and the Army encourages you to comment on all of the alternatives described in this fact sheet during the public comment period, May 9 through June 8, 1992.

The Army intends to clean up the Oxidation Lagoons site so that the public will not be exposed to toxic chemicals from the site. The Army's preferred method for cleaning up the soil involves excavating the contaminated soil followed by washing the soil to remove contaminants. The clean soil will then be used as back-fill on site and the washwater will be treated to remove the contaminants. This method is preferred because it permanently removes contaminants from the soil.

The U.S. Environmental Protection Agency (EPA) and the California Environmental Protection Agency's (Cal-EPA's) Department of Toxic Substances Control (DTSC) and Central Valley Regional Water Quality

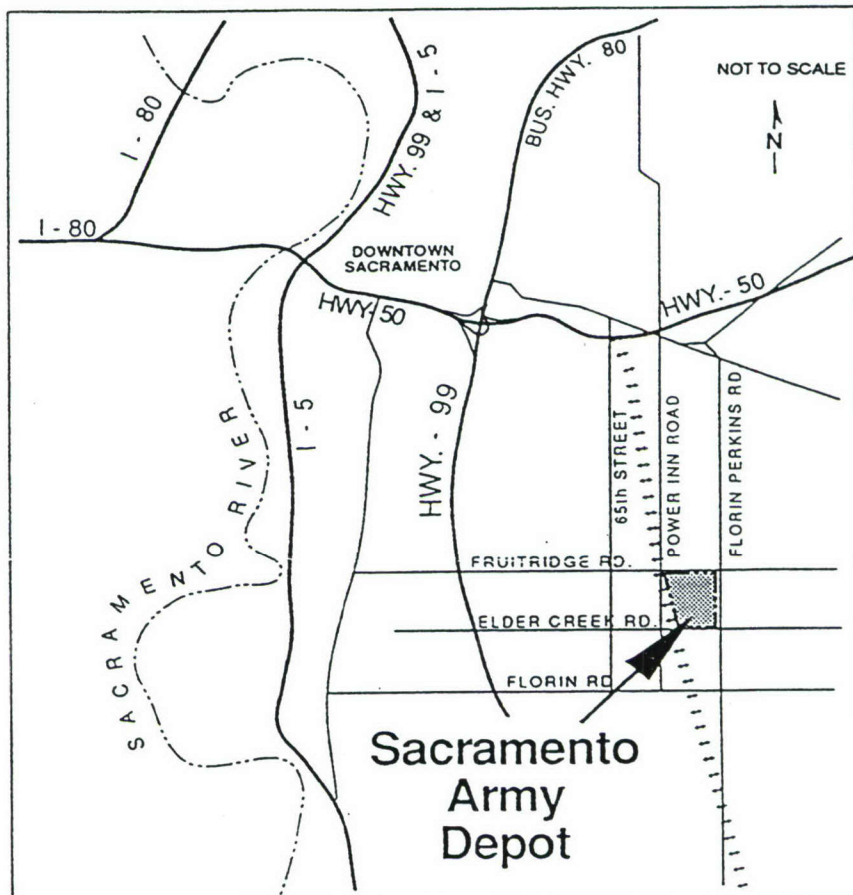


Figure 1: Area Map

Control Board (CVRWQCB) have participated in the selection of the proposed cleanup plan. Detailed descriptions of the Oxidation Lagoons site, including: explanations regarding the extent of contamination at the site, potential health risks posed to the community by the contaminants that are currently found at the site, and all alternatives considered for cleaning up the site, are contained in the Oxidation Lagoons Operable Unit

Feasibility Study report. This document is available for review, along with other site-related documents, in the information repositories listed on page 9 of this fact sheet.

SITE BACKGROUND

The Sacramento Army Depot (SAAD) is located at 8350 Fruitridge Road in Sacramento, California, ap-

proximately seven miles southeast of the city's central business district (see Figure 1). SAAD was established at its present location in 1945 to receive, store, issue, and maintain electronics supplies and commodities. Operations at SAAD involved the use of hazardous materials, includ-

ing organic solvents, oils and grease, fuels, lubricants, caustic solutions, and metal-plating baths.

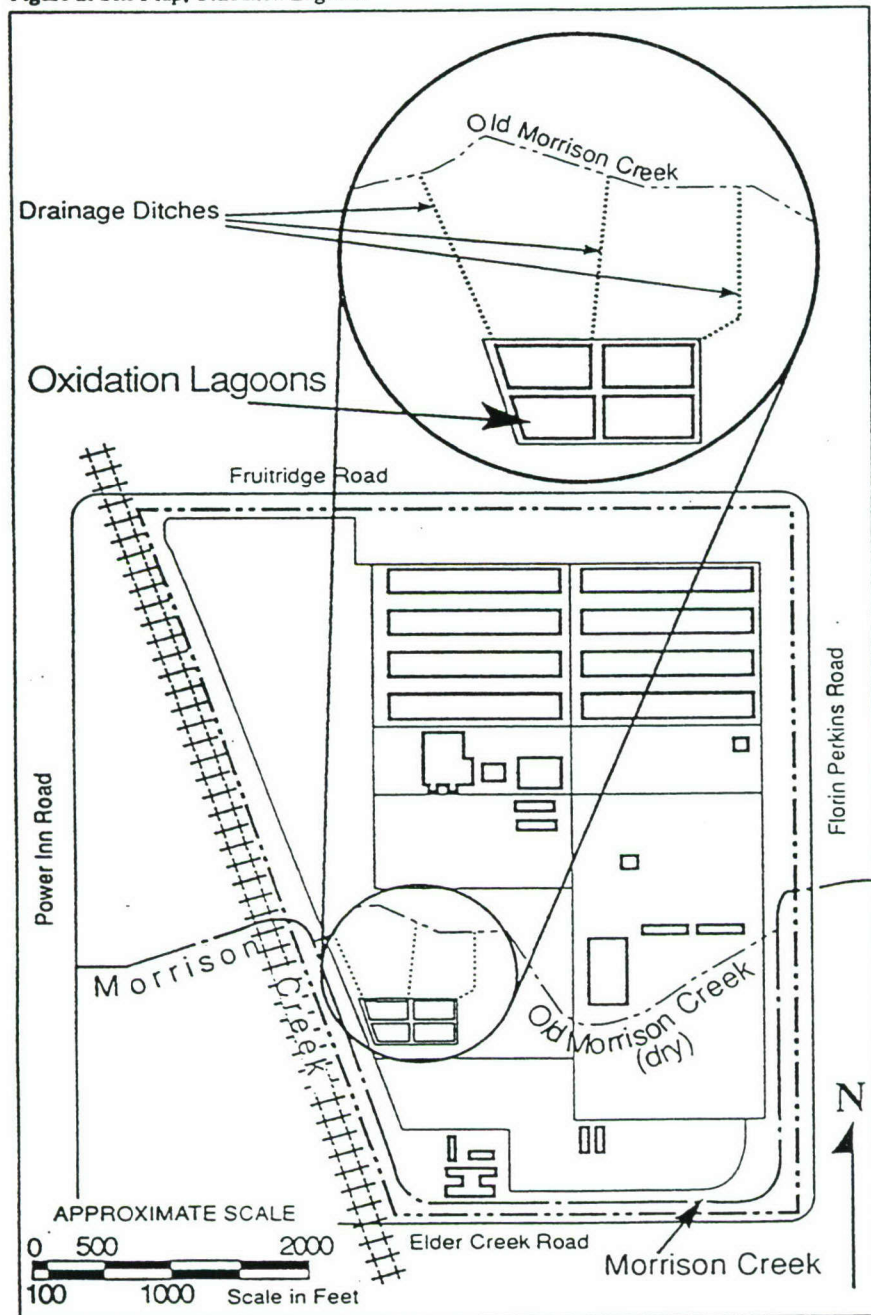
The Oxidation Lagoons site is located in the southwest quarter of the SAAD facility and includes the four Oxidation Lagoons, three drainage

ditches, and a portion of Old Morrison Creek (see Figure 2). The four ponds, called the Oxidation Lagoons, were built in 1950 to receive wastewater from operations at SAAD. Much of the wastewater came from metal-plating operations at SAAD and, therefore, contained metals. When the four Oxidation Lagoons became full, wastewater would drain from the four lagoons to Old Morrison Creek by way of the three drainage ditches. Old Morrison Creek is the name given to the portion of Morrison Creek that originally flowed through the SAAD facility. When SAAD was constructed, the Army re-routed Morrison Creek so that it flowed around the south side of the SAAD facility, and Old Morrison Creek became a dry creek bed. In 1972, use of the Oxidation Lagoons ceased. The four Oxidation Lagoons, the three drainage ditches, and Old Morrison Creek are currently dry and all but one of the lagoons are covered with vegetation.

SCOPE AND ROLE OF THE OPERABLE UNIT

In order to speed up the investigation and remediation at SAAD, the Army and participating regulatory agencies have agreed to treat the individual areas where hazardous materials were used, stored, or discharged as separate "Operable Units". The first "Operable Unit" to reach the public comment phase of the remediation process was the on-site ground water. The Record of Decision for on-site groundwater documents and describes how groundwater under the southwest corner of the SAAD facility is currently being cleaned up. The Record of Decision for the on-site

Figure 2: Site Map, Oxidation Lagoons



groundwater was signed in 1989. Tank 2 was the second Operable Unit at SAAD to reach the public comment phase of the cleanup process. A Record of Decision documenting the cleanup of Tank 2 was signed in December 1991. The Oxidation Lagoons site is the third operable unit to reach the public comment phase of the remediation process.

The Army and regulatory agencies expect to sign a Record of Decision for the Oxidation Lagoons Operable Unit in July 1992. The Record of Decision will document and explain the basis for the remedy selected to clean up the soil in the Oxidation Lagoons and how the public comments on this Proposed Plan were addressed. The selected remedy is

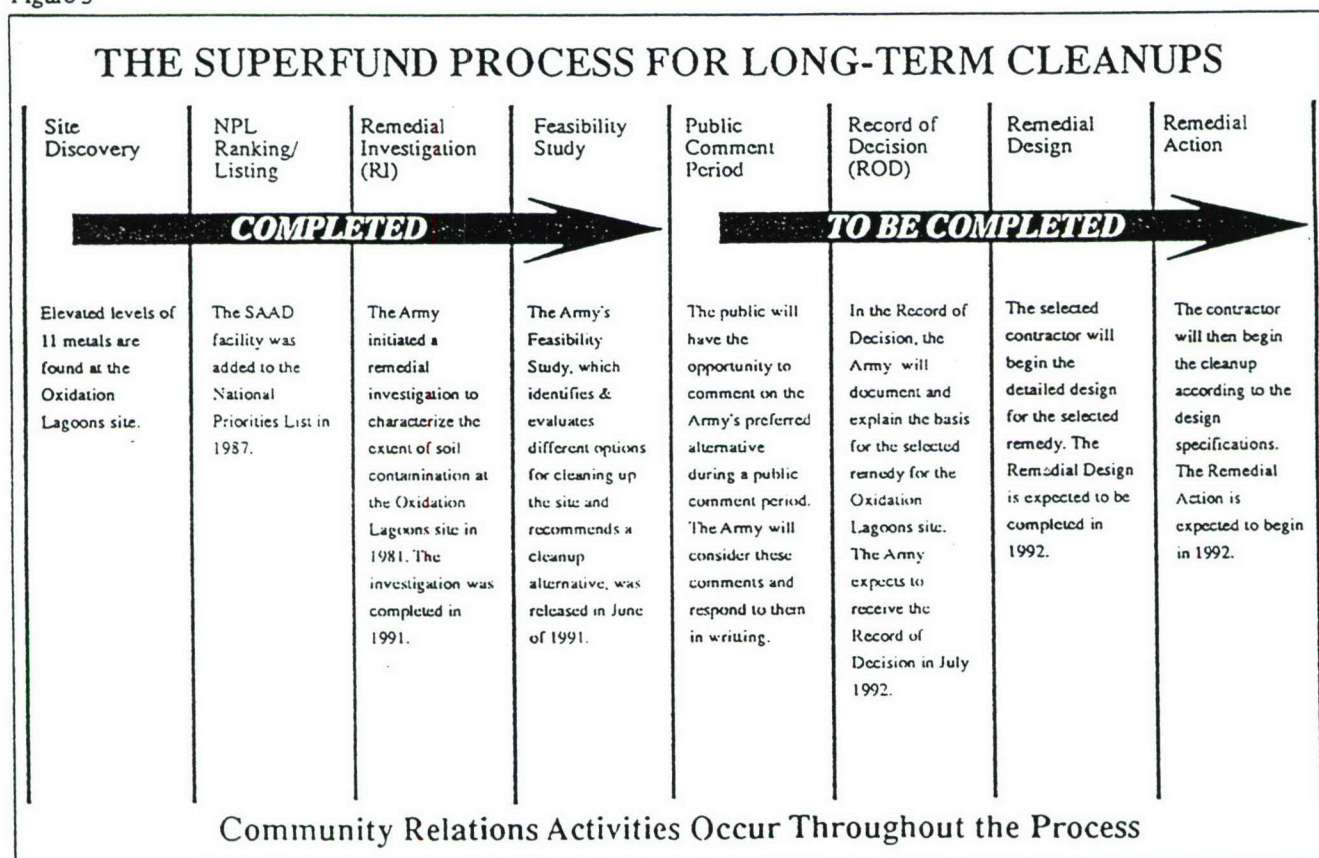
expected to meet the established cleanup goals and satisfy the regulatory agencies and the community. The EPA and the State will oversee work by the Sacramento Army Depot during the design and implementation of the cleanup. If the chosen technologies do not fully reduce contaminant levels to the cleanup goals, and if different cleanup technologies are necessary, the Army will notify you of the proposed changes. The Superfund Process is displayed Figure 3.

SUMMARY OF SITE CONTAMINATION

The U.S. Army and participating regulatory agencies have been inves-

tigating soil and ground water at the Oxidation Lagoons site since 1981. The investigation showed that soil approximately 18 inches to 3 feet under the lagoons, drainage ditches, and Old Morrison Creek has been contaminated by metals. Because soils naturally contain metals, the investigation also determined the levels of metals normally found at the site. Eleven metals were detected at higher levels than normally found in soil at the site. These 11 metals are antimony, arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, silver, and zinc. Ground water, which is 80 feet below ground surface, has not been affected by metals from the Oxidation Lagoons site.

Figure 3



ASSESSMENT OF HEALTH RISKS

Because metals are present in the soil at higher levels than normal, a risk assessment was conducted at the Oxidation Lagoons site to assess the current and future risks to public health. The risk assessment was used to determine which of the 11 metals found at the site could cause harmful effects on human health and the environment if the site were not cleaned

up. The risk assessment found that three of the 11 metals, at the levels currently found on site, could cause harmful effects: arsenic, antimony, and cadmium. The risk assessment showed that the other eight metals present at higher-than-normal levels, including lead, will not cause harmful health effects at the levels found on site. The worst-case estimate from the risk assessment was then used to develop cleanup goals that are protective of public health.

EPA's goal for exposure to site chemicals that may cause cancer is 1 in 1,000,000 people. A cancer risk level of "1 in 1,000,000 people" means that one additional person out of one million people exposed to chemicals at the site over a 70 year lifetime might develop cancer. Arsenic and cadmium are potential cancer-causing metals at the levels currently found on site. Additionally, EPA uses a number called a Hazard Index to evaluate non-cancer health risks.

Table 1

SUMMARY OF POTENTIAL RISKS POSED BY SITE METALS

	Potential Exposure Pathways	Metals*	Potential Excess Cancer Risk	Potential Non-Cancer Health Hazard Index
Future On-Site Resident	Dust Inhalation	Arsenic Cadmium Other Metals	Less than 1 in 1,000,000 2 in 100,000 Less than 1 in 1,000,000	Less than 1.0 Less than 1.0 Less than 1.0
	Direct Contact with Soil	Arsenic Cadmium Other Metals	3 in 1,000,000 Less than 1 in 1,000,000 Less than 1 in 1,000,000	Less than 1.0 3 Less than 1.0
	Soil Ingestion	Arsenic Other Metals	2 in 100,000 Less than 1 in 1,000,000	Less than 1.0 Less than 1.0
	Drinking On-Site Ground Water†	Arsenic Antimony Cadmium Other Metals	2 in 10,000 Less than 1 in 1,000,000 Less than 1 in 1,000,000 Less than 1 in 1,000,000	Less than 1.0 3 2 Less than 1.0
	Total Health Risk *		2.4 in 10,000	8
Future Off-Site Resident	Dust Inhalation	All Metals	Less than 1 in 1,000,000	Less than 1.0
	Drinking Off-Site Ground Water†	All Metals	Less than 1 in 1,000,000	Less than 1.0
	Total Health Risk *		Less than 1 in 1,000,000	Less than 1.0

* Eleven metals were found at higher-than-normal levels: Antimony, Arsenic, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Nickel, Silver, and Zinc.

* "Total Health Risk" is the cumulative health risk posed by all of the contaminant metals at the levels found on site.

† These ground water concentrations are based on highly conservative methods. A mobility assessment performed using site-specific conditions indicates that the metals will not migrate to ground water.

The Hazard Index is calculated according to formulas developed by EPA. A Hazard Index of greater than 1.0 indicates a potential non-cancer health risk. Cadmium and antimony are currently present on site at levels that may cause non-cancer health effects, such as damage to the kidney. Actual or threatened releases of hazardous substances from this site, if not addressed by the preferred alternative or by one of the other active measures considered, may present a current or potential threat to public health, welfare, or the environment.

The risk assessment analyzed several ways that the public could be exposed to metals at the Oxidation Lagoons site. These are summarized in Table 1, on page 4.

An assessment has also been made of ecological impacts from metals in the Oxidation Lagoons. No threatened or endangered species have been found at the site. Information on the Ecological Risk Assessment has been provided in the Oxidation Lagoons Operable Unit Feasibility Study.

SUMMARY OF CLEANUP GOALS

The soils at the Oxidation Lagoons site will be cleaned up to levels that are protective of public health and comply with federal, State, and local standards, including policies that protect groundwater. Site-specific cleanup goals for the Oxidation Lagoons site soils are summarized in Table 2. The goal of the Army and regulatory agencies is to reduce excess cancer risks to 1-in-1,000,000 people upon completion of a cleanup. For non-cancer health effects, a Hazard Index of greater than 1.0 represents an unacceptable health threat to EPA and to the Army. A discussion of how the cleanup goals in Table 2 relate to the chemicals of concern listed on Table 1 is presented below.

Arsenic

Arsenic in the contaminated soil will be cleaned up to levels normally present in soils at the site. The level, or concentration, of a chemical in soil is expressed in terms of the num-

ber of grams of the chemical found in one kilogram of soil. Since there are one million grams in a kilogram, the number of grams per kilogram is also called the number of "parts per million", or ppm. Arsenic is naturally found in soil at SAAD at levels around 5 grams per kilogram of soil (5 parts per million). The clean-up goal, 5 parts per million, will protect public health and the environment, and will prevent migration of arsenic to groundwater.

Antimony

Antimony was only detected in three of the 62 samples analyzed. Therefore, it does not appear to exist throughout the site. However, to be conservative, the health risk assessment assumed that antimony was present throughout the site at an average level of 28 parts per million. The average site level at the operable unit is less than the federal proposed action level of 30 parts per million. The proposed action level is a concentration that indicates the need for further assessment. Therefore, a specific cleanup goal was not established for this metal. A benefit of the preferred alternative is that some cleanup of antimony, where present, will be achieved. Antimony, at the levels present at the site, will not migrate to groundwater.

Cadmium

Cadmium is normally present in soil at SAAD at average levels of 6 to 7 parts per million. Cadmium has been found at the Oxidation Lagoons Operable Unit at levels up to 1,960 parts per million. The cleanup goal for cadmium, 40 parts per million, will

Contaminant	Average ⁺ Site Levels (ppm*)	Maximum Levels Found On Site (ppm*)	Soil Cleanup Goals (ppm*)	Percent Reduction In Health Risks
Arsenic	13	40	5	60
Cadmium	449	1,960	40	91
Lead	194	1,460	174	10
Antimony	28.2	397	ND	ND

* = parts per million
⁺ = Average levels were calculated by summing the results for all samples from the site and dividing by the total number of samples, and then adding two standard deviations to estimate the highest reasonable average.
 ND = Not determined, see Summary of Cleanup Goals for discussion.

Figure 4: The Nine Selection Criteria

How is a Remedy Selected & Implemented

Evaluation Criteria

The Army, in conjunction with involved regulatory agencies and the public, will select a cleanup alternative for the site based on nine criteria used to evaluate the alternatives. The evaluation criteria have been developed to address legal requirements, as well as technical and policy considerations that have proven to be important for selecting cleanup alternatives.

Each alternative is assessed against the nine evaluation criteria described to the right. The results of this assessment are used to compare the alternatives and identify the key tradeoffs among the alternatives. This approach is designed to provide decision makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for a site and satisfy legal requirements. The nine criteria are summarized in the box to the right.

The Nine Criteria

Short Term Effectiveness

Addresses the period of time needed to complete the remedy, and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until the cleanup goals are achieved.

Long Term Effectiveness & Performance

Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.

Reduction of Toxicity, Mobility & Volume Through Treatment (TMV)

Refers to the anticipated ability of a remedy to reduce the toxicity, mobility and volume of the hazardous components present at the site.

Implementability

Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

Cost

Evaluates the estimated capital, operation, and maintenance costs of each alternative.

Overall Protection of Human Health and the Environment

Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Site remediation should comply with federal and State laws that apply to the project. Addresses whether or not a remedy will meet all ARARs of federal and state environmental statutes or provide grounds for invoking a waiver.

State Acceptance

Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

Community Acceptance

Indicates whether community concerns are addressed by the remedy and whether the community has a preference for a remedy. Public comment is an important part of the final decision.

result in a maximum excess cancer risk that is less than 2-in-1,000,000, and will prevent cadmium from moving to groundwater.

Lead

Lead is normally present in soil at SAAD at average levels of 8 to 9 parts per million. Lead has been found at the Oxidation Lagoons Operable Unit at levels up to 1,460 parts per million. Based on the risk assessment, lead in soils at the site will not pose a health risk. However, lead will be cleaned up to risk-conservative guidance levels developed by

DTSC. The cleanup goal is 174 parts per million. Federal standards for lead levels in soil do not currently exist. After cleanup, lead will not migrate to groundwater.

Other Metals

Specific cleanup goals were not established for the other seven metals found at higher-than-normal levels since they do not pose a health threat to people or the environment and will not move to groundwater at the levels detected. However, the preferred alternative is expected to reduce the levels of these metals in site soils,

resulting in additional protections.

EVALUATION OF CLEANUP ALTERNATIVES

During the process of developing a proposed plan for soil remediation, 14 alternatives were evaluated. Nine alternatives did not satisfy one or more of the nine evaluation criteria (see Figure 4 of a description of the criteria). The remaining five alternatives are summarized in Table 3.

1. **No Action:** This alternative would leave contaminated soils in place. This alternative is retained as

a reference point for comparison with other alternatives, even though it does not satisfy the nine criteria listed in Figure 4. This alternative is not preferred because it is not protective of human health and the environment since no cleanup takes place.

Treatment Cost: \$0

Treatment Time: Not Applicable

2. **Excavation, On-Site Soil Washing, On-Site Treatment of Wash Liquid, Backfill:** This alternative involves excavating the contaminated soils, followed by on-site soil washing to remove the metals from the excavated soil. Dust created while excavating will be controlled using water or foam sprays. Therefore, no air emissions are expected. The soil washing process produces clean soil, wash liquid, and a residual sludge containing the contaminants. The clean soil will be put

back into the excavation. The wash liquid generated during the soil washing process will be treated on site to the levels specified in SAAD's sewer discharge permit. Treatment of the wash liquid will be done by adding precipitates to the water so that the metals dissolved in the water settle out. The water can then be disposed of in the sanitary sewer which is routed to the Sacramento Regional Wastewater Treatment Plant. The residual sludge containing the precipitated metals will be considered a hazardous waste and will be hauled off site for treatment and disposal. The off-site treatment and disposal could consist of either (1) stabilization and disposal in a certified hazardous waste landfill or (2) metals recovery at a licensed smelter. The final treatment-and-disposal option will depend on the soil-washing contractor selected by SAAD. No air emissions are expected during the treatment of the wash liquid.

After excavating, soil samples collected from the bottom and sides of the excavation will be tested to verify that the contaminated soils with levels higher than the cleanup goals shown in Table 2 have been removed. The treated soil also will be tested after soil washing to see that the soil cleanup levels have been met. After the clean soil has been replaced in the excavated area, native vegetation will be planted over the Oxidation Lagoons site.

This alternative will comply with federal and State Land Disposal Restrictions through a soil and debris Treatability Variance under Code of Federal Regulations Title 40 (40 CFR), Part 268.44. The Treatability Variance process is available to comply with the Land Disposal Restrictions when the established treatment standard for a waste can not be met due to the complex nature of contaminated soil and debris. This Vari-

TABLE 3: COMPARISON OF REMEDIAL ALTERNATIVES

ALTERNATIVE	COST*	TIME	ADVANTAGES	DISADVANTAGES
1. No Action	\$0	N/A	•No Capital Cost	•Leaves contaminated soil in place •Does not protect human health and the environment •Does not comply with ARARs
2. Excavation, On-Site Soil Washing, On-site Treatment of Wash Liquid, Backfill	\$5,020,000	6 to 9 months	•Contaminants permanently removed from the site •Reduced transportation risks since wash liquid is treated on site	•Higher cost
3. Excavation, On-site Soil Washing, Off-site Disposal of Wash Liquid, Backfill	\$4,556,000	6 to 9 months	•Contaminants permanently removed from the site	•Increased transportation risks associated with transport of contaminated wash liquid
4. Excavation, Stabilization, Backfill with Stabilized Soil	\$2,574,000	3 months	•Low cost	•Contaminants not removed from site •Stabilized soil may not comply with agency standards
5. Excavation, Stabilization, Backfill with Stabilized Soil, Cap	\$3,800,000	3 to 6 months	•Low risk of movement of contaminants	•Contaminants not removed from site •Stabilized soil may not comply with agency standards

* Estimated treatment cost. Actual contractor bids may vary from estimates.

ance will result in the use of soil washing to obtain EPA's interim "treatment levels/ranges" for cadmium, chromium, lead and nickel in the contaminated soil at the Oxidation Lagoons Operable Unit. See Section 7.2.2.3 of the Detailed Analysis of Alternatives in the *Oxidation Lagoons Operable Unit Feasibility Study Report (Revised March 13, 1992)* for the specific treatment levels for these four metals.

This alternative will result in a permanent/final solution.

Estimated
Treatment Cost: \$5,020,000

Treatment Time: 6 to 9 months

3. Excavation, On-Site Soil Washing, Off-Site Disposal of Wash Liquid, Backfill: This alternative is the same as Alternative 2 except that the wash liquid generated

from the soil washing process would be transported and treated off site. The contaminated liquid would have to be transported via a public route. Alternative 2 is preferable to Alternative 3 because hazardous liquids would be treated on site, thereby reducing risks associated with transporting hazardous liquids.

This alternative will comply with the Land Disposal Restrictions through a Treatability Variance under Code of Federal Regulations Title 40 (40 CFR), Part 268.44. This Variance will result in the use of soil washing to obtain EPA's interim "treatment levels/ranges" for cadmium, chromium, lead and nickel in the contaminated soil at the Oxidation Lagoons Operable Unit. See Section 7.2.2.3 of the Detailed Analysis of Alternatives in the *Oxidation Lagoons Operable Unit Feasibility Study Report (Revised March 13, 1992)* for the specific treatment lev-

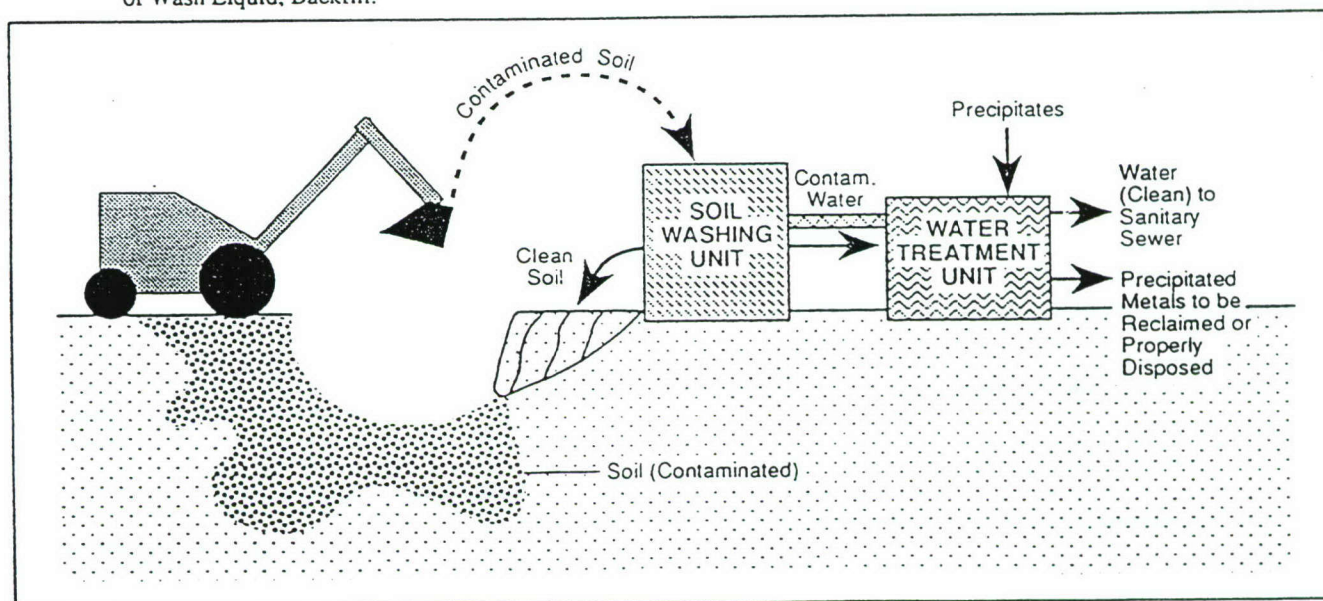
els for these four metals.

Estimated
Treatment Cost: \$4,556,000

Treatment Time: 6 to 9 months

4. Excavation, Stabilization, Backfill with Stabilized Soil: Unlike Alternatives 2 and 3, which permanently remove the contaminant metals from the soil, Alternative 4 leaves all contaminants in place at the site but reduces their mobility so that the public is not exposed to the chemicals. This alternative involves excavating contaminated soils followed by on-site stabilization of the metals in the excavated soil. Dust created while excavating will be controlled by using water or foam sprays. The metals in the excavated soil will be trapped in the soil (stabilized) by mixing the soil with water, additives, and cement which will harden like concrete. The contaminated soil par-

Figure 5: The Army's Preferred Alternative for Soil Cleanup: Alternative 2 - Excavation, Soil Washing, On-Site Treatment of Wash Liquid, Backfill.



ticles trapped in the hardened material are then able to resist erosion and movement of rainwater through the soil that might have otherwise carried the contaminants deeper into the soil.

After the soil has been stabilized, it will be tested to check whether the contaminant metals have been trapped by the stabilization process. Stabilization may not be able to reduce contaminant movement enough to meet agency requirements. Soil samples collected from the bottom and sides of the excavation will be tested to verify that the contaminated soil has been removed, then the stabilized soil will be put back into the excavation. The surface of the Oxidation Lagoons will be covered with native soil and vegetation.

This alternative could increase the total volume of contaminated mass, and does not reduce the toxicity of the chemicals left on site. Therefore, it may not satisfy the third evaluation criteria described in Figure 4.

Estimated
Treatment Cost: \$2,574,000

Treatment Time: 3 months

5. Excavation, Stabilization, Backfill with Stabilized Soil, Cap:

This alternative is the same as Alternative 4 except that the stabilized soil is covered to prevent rainwater infiltration. This alternative is included because the stabilized soil produced by Alternative 4 may not be able to reduce the contaminant movement enough to meet agency requirements. Thus, after the soil is put back into the excavation, a thick layer of plas-

INFORMATION REPOSITORIES

The information repositories include site-related documents, including the cleanup plan for Oxidation Lagoons site. The information repositories are available for public review at:

CALIFORNIA STATE UNIVERSITY SACRAMENTO LIBRARY 2000 JED SMITH DRIVE SACRAMENTO, CA 95819 (916) 278-6291	SACRAMENTO ARMY DEPOT VISITOR CONTROL BUILDING 8350 FRUITRIDGE ROAD SACRAMENTO, CALIFORNIA 95813-5052
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FOR FURTHER INFORMATION

The Superfund program places a high value on community input in addressing hazardous cleanups of Superfund sites. Your comments are invited and encouraged. If you have any questions or concerns about the cleanup activities at Sacramento Army Depot, please direct them in writing to one of the following offices:

RICHARD R. DYER PUBLIC AFFAIRS OFFICE SACRAMENTO ARMY DEPOT 8350 FRUITRIDGE ROAD SACRAMENTO, CA 95813-5012 (916) 388-2324	DANIEL OBURN ENVIRONMENTAL PROTECTION SPECIALIST IRP PROGRAM MANAGER SACRAMENTO ARMY DEPOT 8350 FRUITRIDGE ROAD SACRAMENTO, CALIFORNIA 95813-5052
MARLON MEZQUITA PROJECT MANAGER U.S. ENVIRONMENTAL PROTECTION AGENCY REGION IX-H-9-2 75 HAWTHORNE STREET SAN FRANCISCO, CALIFORNIA 94105	GORDON STEPHENS PROJECT MANAGER DEPARTMENT OF TOXIC SUBSTANCES CONTROL 10151 CROYDEN WAY SACRAMENTO, CALIFORNIA 95827
MICHAEL MOSBACHER PROJECT MANAGER REGIONAL WATER QUALITY CONTROL BOARD 3443 ROUTIER ROAD SACRAMENTO, CA 95827	

tic, clay, soil, and native soil and vegetation will be placed over the stabilized soil to prevent rainwater from coming in contact with the stabilized soil. This cover is often referred to as a cap. Like Alternative 4, Alternative 5 will reduce the mobil-

ity of the contaminants that are left on site in the stabilized soil so that the public is not exposed to the chemicals. The total volume of contaminated soil could increase, and the toxicity of the chemicals left on site will not be reduced.

Estimated
Treatment Cost: \$3,800,000

Treatment Time: 3 to 6 months

PREFERRED ALTERNATIVE FOR CLEANUP

The Army is proposing Alternative 2 for the cleanup of soil contamination (see Figure 5). Alternative 2 is protective of human health and the environment, and complies with all Applicable, Relevant and Appropriate Regulations (ARARs). It provides short-term effectiveness, long-term

protection, reduces the mobility and volume of soil contaminants and is technically practical. The four alternatives being considered (Alternatives 2 through 5) are comparable in the way that they meet the nine evaluation criteria described in Figure 4. The Land Disposal Restrictions are ARARs for four of the five remedial alternatives considered. Alternatives 2 and 3 will comply with the Land Disposal Restrictions through a Treatability Variance. The preferred alternative provides the best balance of tradeoffs with respect to the nine evaluation criteria. The major ad-

vantages of Alternative 2 are that the contaminants are permanently removed from the site and that hazardous liquids do not have to be transported off-site. The preferred alternative will cost more than the other alternatives, but is expected to reduce toxicity, mobility and volume more effectively than Alternatives 4 and 5. It also satisfies the criteria for short-term effectiveness better than Alternative 3, since the preferred alternative does not have risks associated with transporting hazardous materials.



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OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

Public Comment Period:

During the public comment period, May 9 through June 8, 1992, you are encouraged to comment on the Oxidation Lagoons site cleanup alternatives at Sacramento Army Depot. Written comments may be sent to Richard R. Dyer, Public Affairs Office, Sacramento Army Dept, 8350 Fruitridge Road, Sacramento, CA 95813-5012. Mr. Dyer can be reached at (916) 388-2324.

OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

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During the public comment period, May 9 through June 8, 1992, you are encouraged to comment on the Oxidation Lagoons site cleanup alternatives at Sacramento Army Depot. Written comments may be sent to Richard R. Dyer, Public Affairs Office, Sacramento Army Depot, 8350 Fruitridge Road, Sacramento, CA 95813-5012. Mr. Dyer can be reached at (916) 388-2324.

INSTALLATION / RESTORATION PROGRAM SACRAMENTO ARMY DEPOT

Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

Burn Pits

Burn Pits - Record of Decision

FACT SHEET



EPA

Sacramento Army Depot

June 1993

Number 3

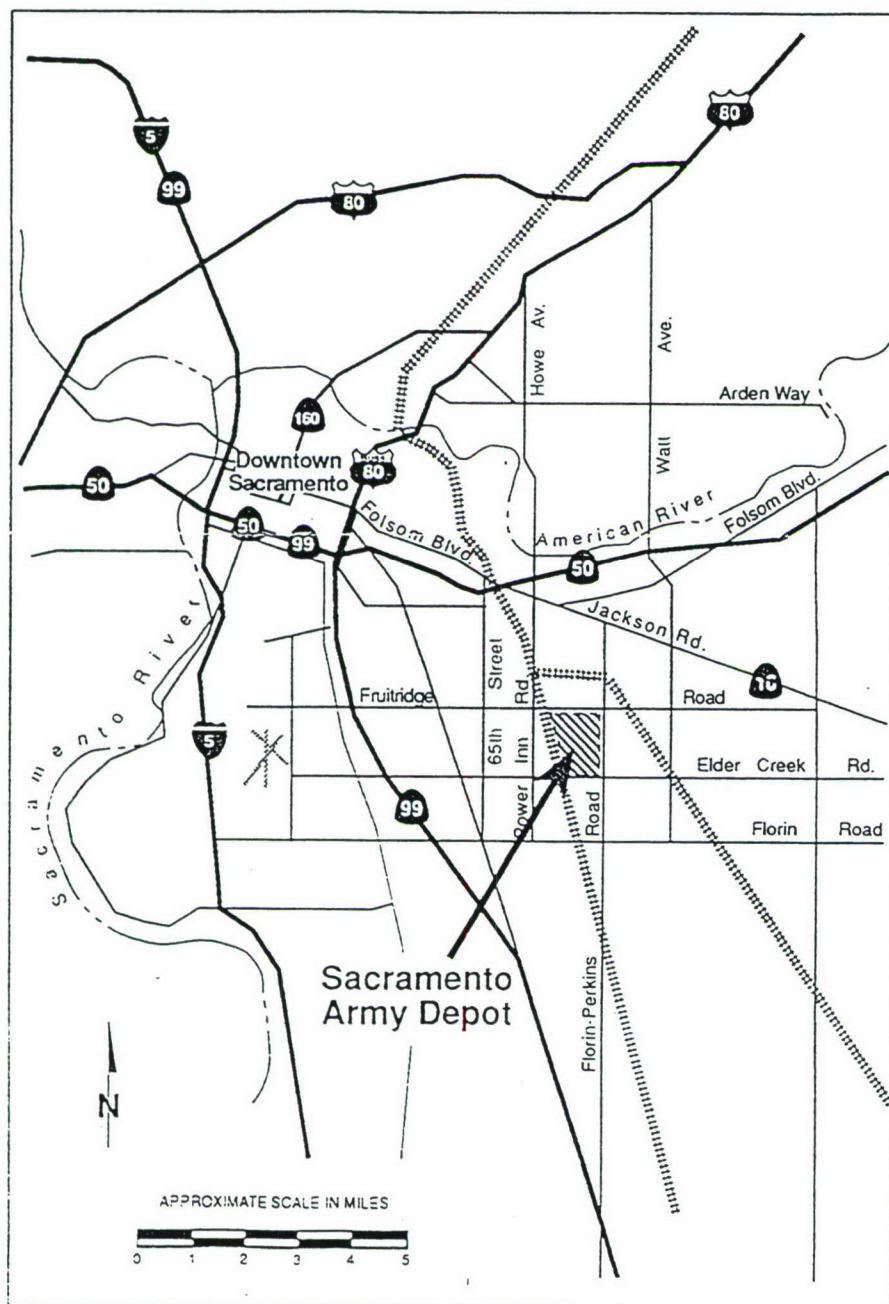


Illustration 1: Area Map

Introduction

The Sacramento Army Depot is a United States military installation located approximately seven miles southeast of downtown Sacramento. The depot consists of approximately 485 acres of relatively flat land bounded by Fruitridge Road on the north, Florin-Perkins Road on the east, Elder Creek Road on the south, and the Southern Pacific Railroad tracks on the west.

In order to facilitate the investigation and remediation activities at the depot, the Army, and participating regulatory agencies have agreed to treat individual areas where hazardous materials were used, stored, or discharged as separate "Operable Units." These operable units are part of the depot's overall clean up strategy. To date, four sites have been remedied as "Operable Units." The first Operable Unit (OU) to reach the public comment phase of the remediation process was the onsite groundwater OU. The Record of Decision (ROD) for the onsite groundwater OU was signed in 1989. The ROD for Tank 2, the second OU, was signed in December 1991. In September of 1992, the Oxidation Lagoons OU became the third ROD signed under the depot's environmental cleanup program.

In March 1993, the U.S. Army, U.S. Environmental Protection Agency-Region 9, and the California Environmental Protection Agency joined together in signing the fourth ROD for the Sacramento Army Depot. This ROD sets forth the cleanup method selected to remedy soil contamination associated with the Burn Pits area.

Background

The Burn Pits site, which occupies approximately two acres along the southwest portion of the depot, consists of two rectangular trenches, the "North Burn Pits," and the "South Burn Pits." Each Burn Pit is about 30 feet wide, 330 to 345 feet long, and approximately 16 to 19 feet deep.

Constructed in the late 1950's, the pits were used intermittently until 1966 for the incineration and burial of plating shop wastes, paint sludges, oil and grease, and batteries. Recent investigations revealed debris consisting of scrap metal, concrete, wood, glass, and other wastes.

Selected Remedy

The U.S. Army evaluated six remediation methods to clean up the soil at the Burn Pits site. The six methods were evaluated against the following criteria:

1. Overall protection of human health and the environment;
2. Compliance with federal and state environmental laws;
3. Reduction of toxicity, mobility, and volume through treatment;
4. Long-term effectiveness and permanence;
5. Short-term effectiveness;

6. Feasibility of implementation;
7. Cost effectiveness;
8. State acceptance; and
9. Community acceptance

Public participation through advertisements, newsletters, a public meeting and a public comment period were used to assist the Army throughout the decision making process. After careful review, the U.S. Army selected a cleanup method that involves treatment of contaminated soil via soil ventilation and stabilization.

Soil ventilation technology involves pulling air through the soil and soil pore spaces to strip volatile organic compounds (VOCs) from the contaminated soil. Contaminants are recovered as soil vapors. The contaminants are then captured by an air emissions control device of granular activated carbon that adsorbs the contaminants found in the soil vapor. Air emissions released from the treatment system must meet applicable federal, state and local air quality requirements.

Some of the moisture normally present in the soil may be removed with the extracted vapor. This water must first be separated from the soil vapor prior to treating the air. The separated water will be treated in the water treatment plant located on the depot.

During the second phase of the clean up, soil contaminated with non-volatile compounds will be excavated and treated by stabilization. Stabilization will be accomplished by excavating contaminated soil and mixing it with the appropriate quantities of cement, silicates and water. The stabilized soil will then be replaced in the excavation area and a clean layer of soil will be used to cover the hardened mass.

Approximately 14,000 yards of soil will be removed and stabilized.

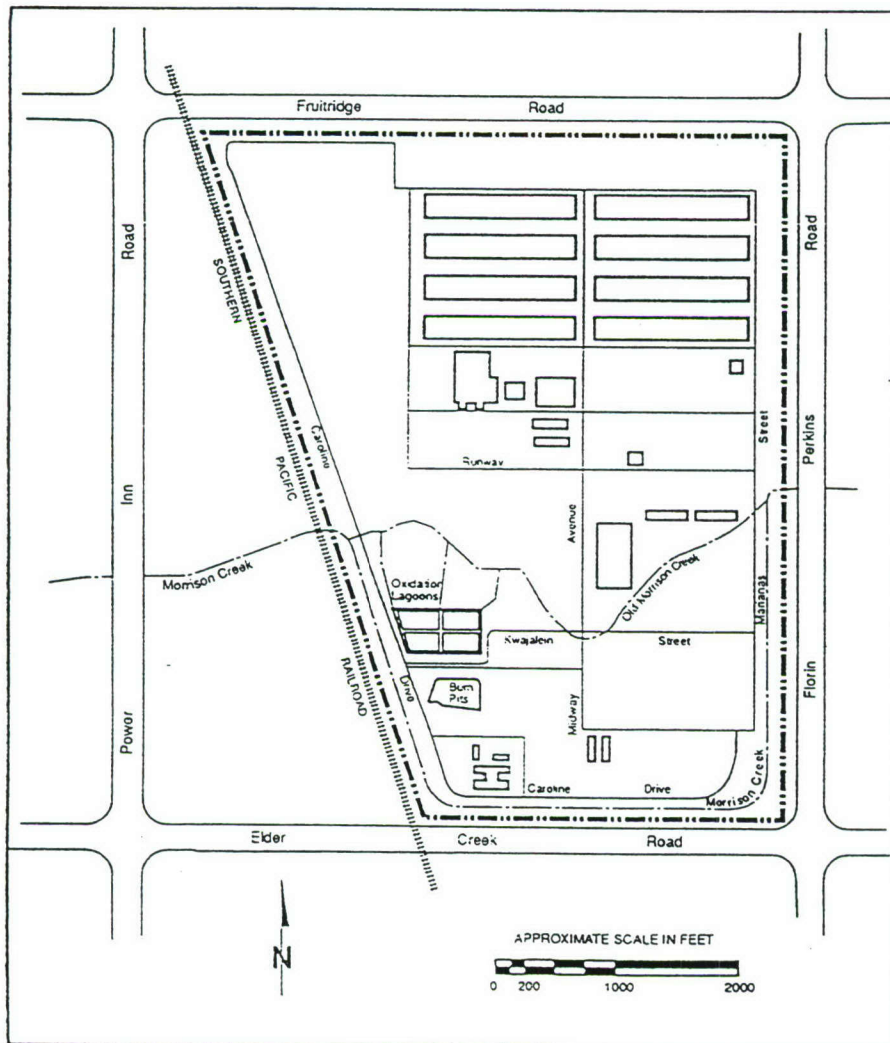


Illustration 2: Site Location Map

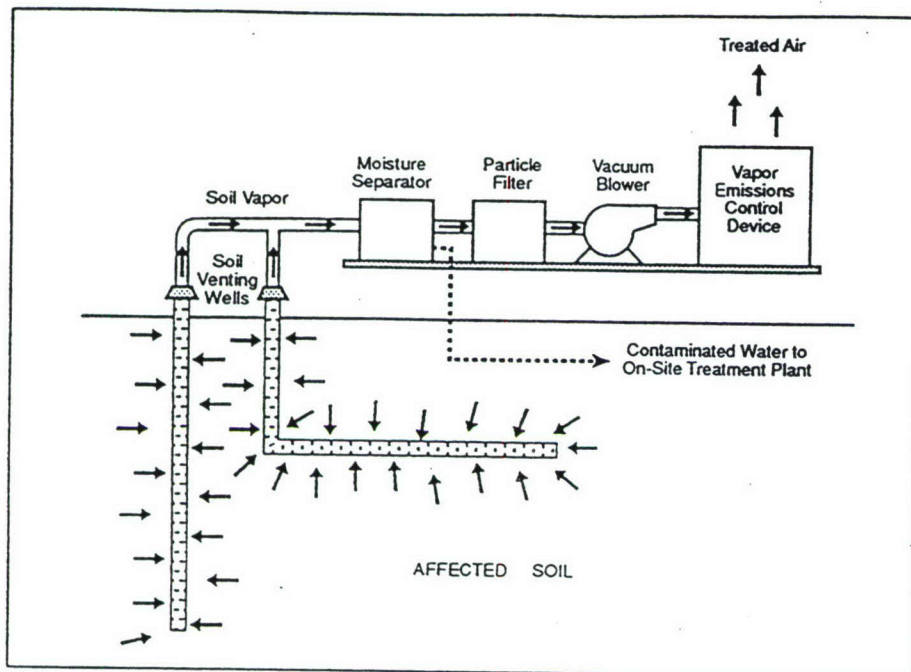


Illustration 3: Soil Ventilation

Public Participation

Public participation is an important part of the depot's environmental cleanup program. The depot encourages the exchange of information through fact sheets, public comment periods, public meetings, and information repositories.

Documents and fact sheets pertaining to the depot's environmental cleanup efforts are available for public review at the following information repositories:

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, CA 95813
916.388.2211
9:00 a.m. - 3:00 p.m. Mon - Friday

California State University, Science Dept.
2000 Jed Smith Drive
Sacramento, CA 95819
916.278.6373
7:45 a.m. - 10:45 p.m., Mon - Thursday
10:00 a.m. - 5:45 p.m., Saturday

George Sim Community Center
6207 Logan Street
Sacramento, CA 95820
916.277.6161
8:00 a.m. - 8:30 p.m., Mon - Friday
10:00 a.m. - 2:00 p.m., Saturday

Glossary

Adsorption - process by which atoms, molecules or ions are taken up and retained on the surfaces of solids by chemical or physical binding.

Operable Unit - Discrete area within a project site identified on the basis of similarity of contaminants, geology, hydrology, or other factors.

Record of Decision (ROD) - A binding document outlining a specific remedial action plan for a site or operable unit.

Remediation - Any reduction in the potential of a contaminant to impact either the environment or human health.

Toxic - Capable of producing a harmful effect.

Volatile Organic Compounds - Carbon containing liquids or gases that often contain halogens such as chlorine, bromine, or fluorine. If not already a gas, these compounds are typically able to evaporate or vaporize at or near room temperature.

Vapor - The gas given off by a solid or liquid substance at ordinary temperatures.

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If you have any questions or concerns
regarding this fact sheet or any of the
environmental activities at the Sacramento
Army Depot, please submit comments in
writing to one of the following offices:

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SACRAMENTO ARMY DEPOT BURN PITS SITE

U.S. Army, Sacramento Army Depot - Sacramento, California

Sacramento Army Depot Announces Plan to Clean Up Soil

The U.S. Army (Sacramento Army Depot) is requesting public comments on the Proposed Plan for cleaning up the Burn Pits area at Sacramento Army Depot. The Proposed Plan for the Burn Pits area is preliminary, and the Army encourages you to comment on all of the alternatives described in this fact sheet during the public comment period, August 3 through September 1, 1992.

The Army intends to clean up the Burn Pits Operable Unit so that the public will not be exposed to toxic chemicals from the site. The Army's preferred method for cleaning up the soil involves ventilation of the soil throughout the Burn Pits Operable Unit, excavation and stabilization of the soil from a portion of the unit, and backfilling with the stabilized soil. This method is preferred because it permanently removes volatile contaminants from the soil, and it stabilizes the remaining contaminants.

The U.S. Environmental Protection Agency (EPA) and the California Environmental Protection Agency's (Cal-EPA) Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (CVRWQCB) have participated in the selection of the proposed cleanup plan. Detailed descrip-

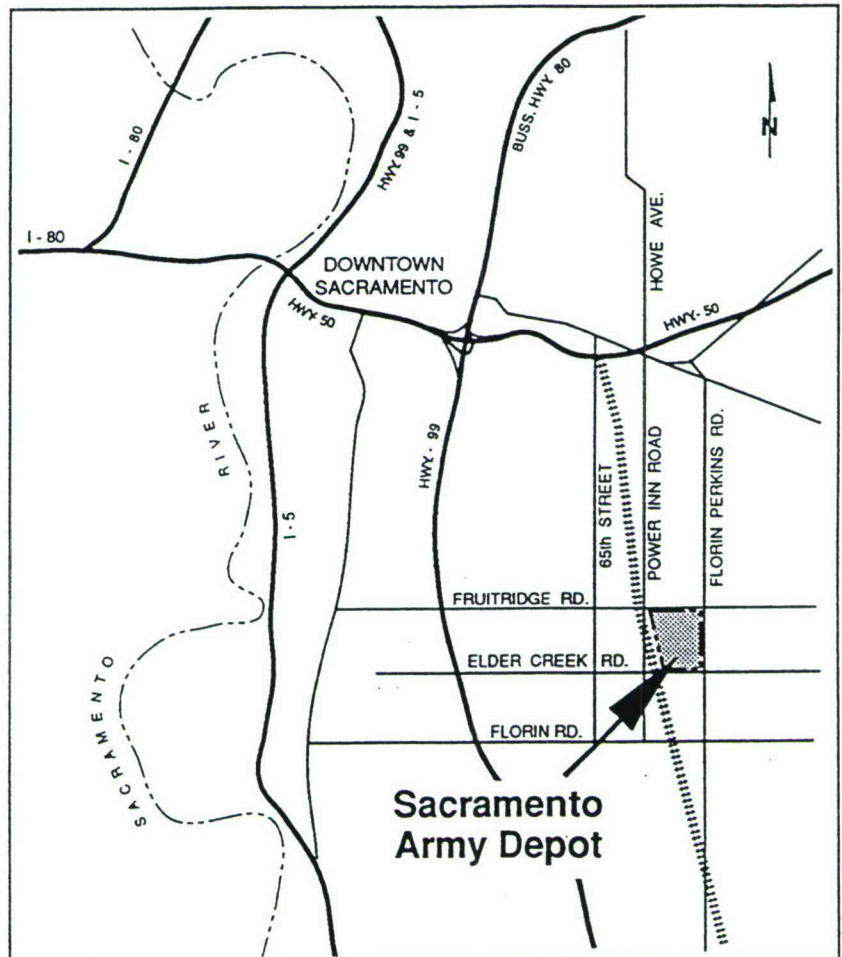


Figure 1: Area Map

tions of the Burn Pits area, including explanations regarding the extent of contamination at the area, and potential health risks posed to the community by the contaminants that are currently found at the area, are contained in the Burn Pits Operable Unit Feasibility Study report. This document is available for review, along with other site-related documents, in the information

repositories listed on page 11 of this fact sheet.

Site Background

The Sacramento Army Depot (SAAD) is located at 8350 Fruitridge Road in Sacramento, California, approximately 7 miles southeast of the City's central business district (see Fig-

ure 1). SAAD was established at its present location in 1945 to receive, store, issue, and maintain electronics supplies and commodities. Operations at SAAD involved the use of hazardous materials, including organic solvents,

cludes two rectangular trenches, the "North Burn Pit" and the "South Burn Pit", in the southwest portion of SAAD (see Figure 2). The two Burn Pits cover approximately two acres, and are currently filled to the ground surface with

until 1966. Each Burn Pit is about 30 feet wide, 330 to 345 feet long, and approximately 16 to 19 feet deep. Materials that were reportedly buried and/or burned in the Burn Pits include plating shop wastes, oil and grease, batteries, and uncontaminated construction debris.

Scope and Role of the Operable Unit

In order to speed up the investigation and remediation at SAAD, the Army and participating regulatory agencies have agreed to treat the individual areas where hazardous materials were used, stored, or discharged as separate "Operable Units". The first "Operable Unit" to reach the public comment phase of the remediation process was the on-site groundwater. The Record of Decision for on-site groundwater documents and describes how groundwater under the southwest corner of the SAAD facility is currently being contained and cleaned up. The Record of Decision for the on-site groundwater was signed in 1989. Tank 2 was the second Operable Unit at SAAD to reach the public comment phase of the cleanup process. A Record of Decision documenting the cleanup of Tank 2 was signed in December 1991. The Oxidation Lagoons area was the third Operable Unit to reach the public comment phase of the cleanup process. The Army and regulatory agencies expect to sign a Record of Decision for the Oxidation Lagoons in August 1992. The Burn Pits area is the fourth Operable Unit to reach the public comment phase of the cleanup process.

The Army and regulatory agencies expect to sign a Record of Decision for the Burn Pits late in 1992. The Record of Decision will document and explain the basis for the remedy selected to clean up soil at the Burn Pits Operable Unit, and how the public comments on this Proposed Plan were addressed. The

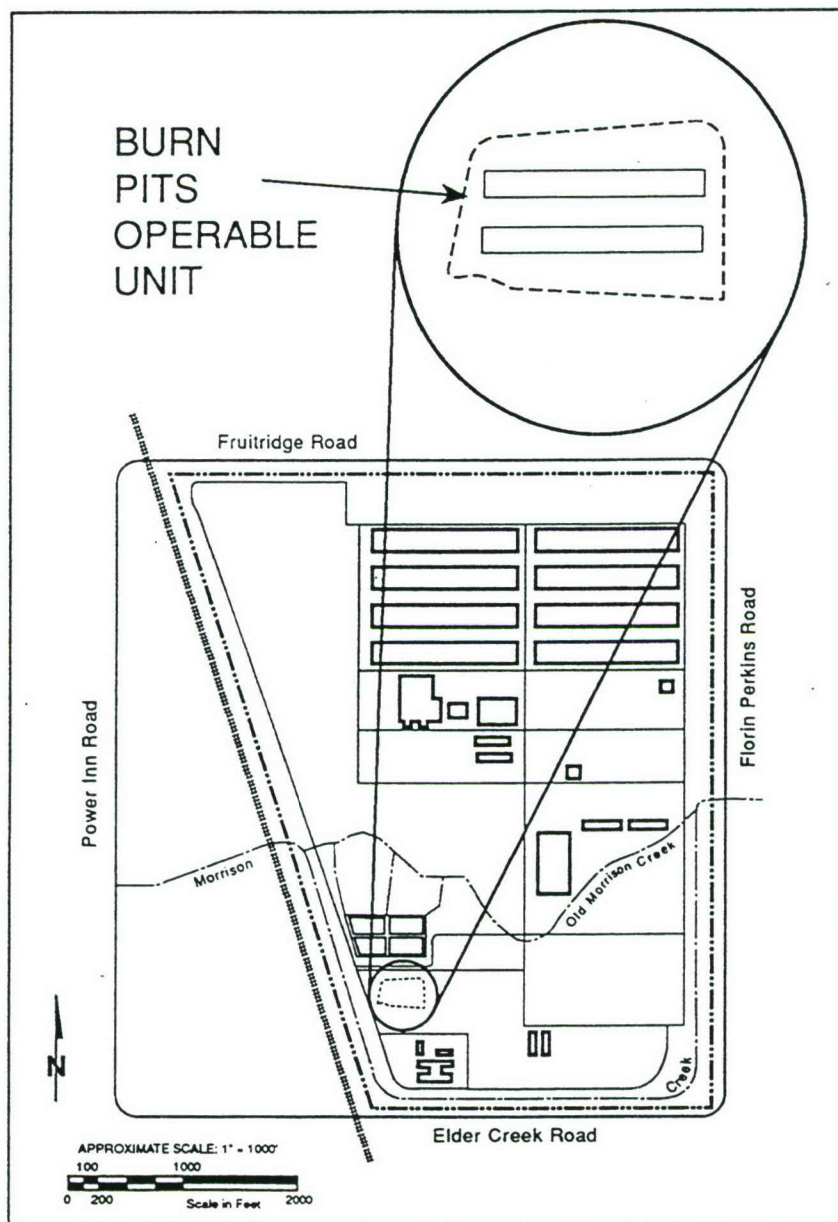


Figure 2: Burn Pits Site Map

oils and grease, fuels, lubricants, caustic solutions, and metal-plating baths.

The Burn Pits Operable Unit in-

soil and debris. The Burn Pits were constructed in the late 1950's, and served intermittently as incineration pits

selected remedy is expected to meet the established cleanup goals and satisfy the regulatory agencies and the community. The EPA and the State will oversee work by the Army during the design and implementation of the cleanup. If the chosen technologies do not fully reduce contaminant levels to the cleanup goals, and if different cleanup technologies are necessary, the Army will notify you of the proposed changes. The Superfund process is illustrated in Figure 3.

Summary of Site Contamination

The U.S. Army and participating regulatory agencies have been investigating soil at the Burn Pits area since 1981. The investigation showed that metals, volatile and semi-volatile or-

ganic compounds, polychlorinated biphenyls (PCBs), dioxins, and furans were present in the soil from the Burn Pits.

The organic compounds detected in soil at the Burn Pits Operable Unit most often were ethylbenzene, di-n-butylphthalate, tetrachloroethene, toluene, 1,2-dichloroethene, trichloroethene, and xylenes. Two PCBs were detected in the soil at the Burn Pits: Arochlor 1254 and Arochlor 1260.

Because soils naturally contain metals, the investigation also determined the levels of metals normally found at the site. Twelve metals were detected at higher levels than normally found in soil at the site. These 12 metals are antimony, arsenic, boron, cadmium, chromium (including chromium III and chromium VI), copper, lead, manga-

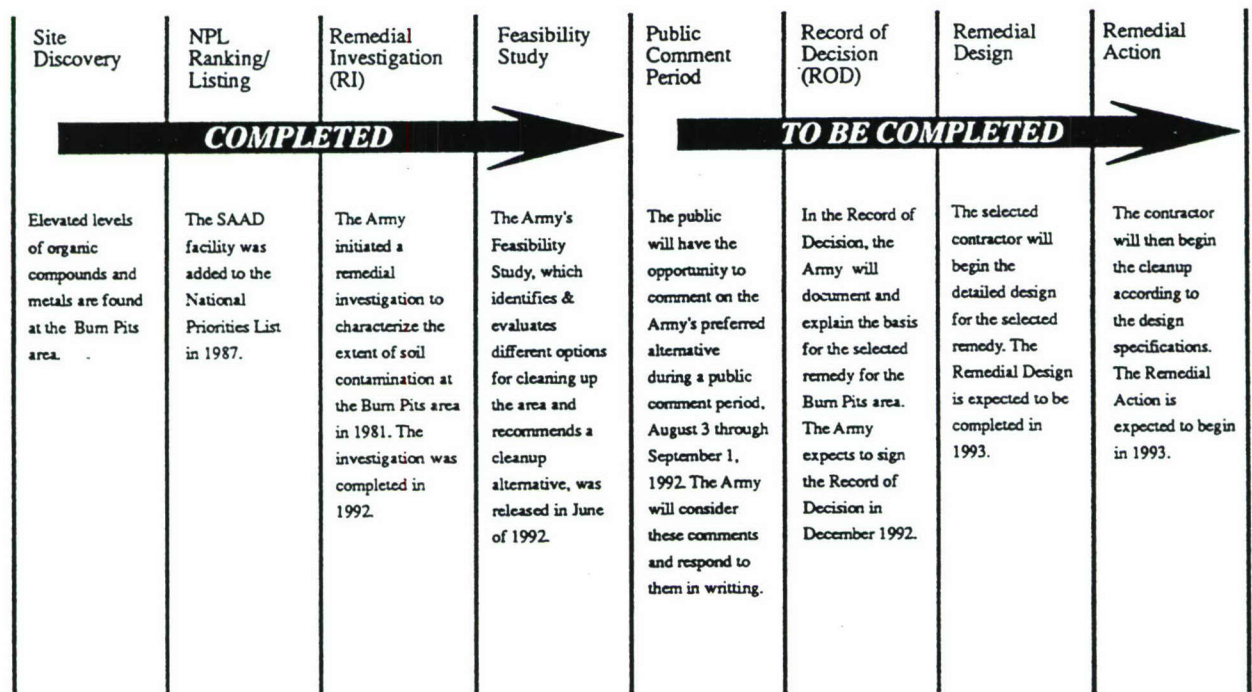
nese, mercury, molybdenum, silver, and zinc.

In order to better define volatile organic contaminant concentrations and distribution for estimating health risks and developing remediation plans, the Army divided the Burn Pits Operable Unit into five units: Unit 1 consists of the North and South Burn Pits, from 0 to 21 feet; and Units 2 through 5 consist of the area extending up to 60 feet outside the burn pits, from depths of 0 to 86 feet, not including groundwater. Metals at concentrations above background, dioxins/furans, and PCBs are confined to Unit 1. Volatile organic compounds are present in soils in each of the five units.

Groundwater is at a depth of approximately 86 feet, but is included in a different Operable Unit. Existing ground water contamination is currently

Figure 3

THE SUPERFUND PROCESS FOR LONG-TERM CLEANUPS



Community Relations Activities Occur Throughout the Process

Table 1

Summary of Potential Risks Posed by Site Chemicals

	Potential Exposure Pathways	Chemicals of Concern	Potential Excess Cancer Risk	Potential Non-Cancer Health Hazard Index
Future On-Site Worker	Ingestion of Soil	Arsenic Dioxins / Furans	1.2 in 100,000 1.0 in 100,000	Less than 1.0 NC
	Inhalation of Dust	Arsenic Cadmium Chromium VI Chromium III	3.5 in 1,000,000 3.9 in 1,000,000 3.4 in 1,000,000 NC	Less than 1.0 Less than 1.0 Less than 1.0 3.2
	Direct Contact with Soil	Dioxins / Furans Arochlor 1254	1.7 in 100,000 2.0 in 1,000,000	NC NC
Current Off-Site Resident	Inhalation of Ground Water Vapors	Tetrachloroethene Trichloroethene	3.2 in 1,000,000 8.8 in 1,000,000	Less than 1.0 NC
Future On-Site Recreation User	Ingestion of Soil	Arsenic	8.2 in 1,000,000	Less than 1.0

NOTE: NC = Not Calculated

being contained and treated by an extraction and treatment system.

Assessment of Health Risks

Because organic compounds, PCBs, dioxins/furans, and metals in concentrations higher than normal are present at the Burn Pits Operable Unit, a risk assessment was conducted for the area to assess the current and future risks to public health. The risk assessment was used to determine which of the chemicals found at the area could cause potential adverse effects on human health and the environment if the area was not cleaned up. This worst-case risk estimate was then used to develop remedial action objectives for this area so

that public health will be protected. The risk assessment estimated that four of the metals, one of the PCBs, two organic compounds, and the dioxins/furans currently found in the Burn Pits Operable Unit have the greatest potential risks and should be further evaluated by EPA and the State of California. The metals of concern are arsenic, cadmium, total chromium (including chromium III and chromium VI), and lead. Eight additional metals that were present at higher than normal levels had risks that were below levels normally associated with adverse health effects, and were not further evaluated. The organic compounds found to pose potential health risks are Arochlor 1254, tetrachloroethene (PCE), and trichloroethene (TCE). Table 1 sum-

marizes the potential risks posed by these chemicals.

Summary of Remedial Action Objectives

The Burn Pits area will be remediated so that public health is protected, and to comply with Federal, State, and local standards, including policies that protect groundwater. The goal of the Army and regulatory agencies is to reduce excess cancer risks to at or below one in 1,000,000 people upon completion of remediation. For non-cancer health effects, the EPA and the Army consider a Hazard Index (HI) of greater than 1.0 to represent an unacceptable health risk, and their goal is to reduce HIs to 1.0 or less.

The California Department of Toxic Substances Control (DTSC) has set health-based standards for lead concentrations in soil. A goal of the EPA and the Army is to comply with these standards.

The Army and the EPA developed remedial action objectives (RAOs) for contaminants at the area which were identified from the risk assessment as being primarily responsible for the health risks. The RAOs are summarized on Table 2. RAOs are based upon the estimated health risks for the individuals most likely to be exposed. At the Burn Pits Operable Unit, individuals most likely to be exposed would be the future on-site worker and the off-site resident (see Table 1).

Specific RAOs were not developed for dioxins/furans, or for PCBs. The low levels found at the site are not likely to be significantly reduced by available remedial technologies, and they are well below levels at which the EPA requires action.

A discussion of how the RAOs in Table 2 relate to the chemicals of concern listed on Table 1 is presented on the following page.

Remedial Action Objective Number 1

RAO No. 1 is to reduce the potential for inhalation of dust containing arsenic, cadmium, total chromium, and chromium VI. Based upon the concentrations of cadmium present in the soils at the site, the exposure must be reduced by 74 percent in order to reduce the health risk to an acceptable level. RAO No. 1 may be achieved by reducing the total amount of dust or by reducing the concentrations of the contaminants in the dust by 74 percent. Maxi-

mum residual concentrations would be: Arsenic 7.3 mg/kg, Cadmium 88 mg/kg, Total Chromium 112 mg/kg, and Chromium VI 16 mg/kg.

Remedial Action Objective Number 2

RAO No. 2 is to reduce the potential for ingestion of arsenic in soil to equal background. Based upon the concentrations of arsenic in soils at the site, 81 percent of the arsenic must be removed from the soil, (to achieve the background level of 7.3 mg/kg) or the amount

of soil that can be consumed must be reduced by 81 percent in order to achieve this RAO.

Remedial Action Objective Number 3

RAO No. 3 is to reduce the off-site resident's risk of inhaling organic vapors while showering by reducing the potential for trichloroethene (TCE) and tetrachloroethene (PCE) to migrate to groundwater. To achieve this RAO, the potential quantity of these chemicals in groundwater must be reduced by 85 percent for TCE and 56 percent for PCE. This can be accomplished either by reducing the quantity of these chemicals in soil to average concentrations of 5 ug/kg for TCE and 10 ug/kg for PCE, or by slowing the rate at which they migrate to groundwater.

Remedial Action Objective Number 4

RAO No. 4 is to reduce TCE, 1,1-dichloroethene (1,1-DCE), and PCE concentrations in leachate from the Burn Pits by 98 percent, 96 percent, and 92 percent, respectively, so that they do not exist at concentrations which exceed the California Department of Health Services drinking water standards maximum contaminant levels. To accomplish this RAO, TCE, 1,1-DCE, and PCE concentrations in soil must be reduced to less than 5 ug/kg, or migration of the leachate to groundwater must be slowed.

Remedial Action Objective Number 5

RAO No. 5 is to reduce lead concentrations in soils so they are within the health-based guidelines set by the DTSC. To accomplish this, lead concentrations must be reduced by 92 percent to obtain an average concentration of 174 mg/kg, or the potential for soil ingestion must be reduced by 92%.

Table 2

Remedial Action Objectives

REMEDIAL ACTION OBJECTIVES	TARGET CHEMICALS*	% REDUCTION OF CONTAMINANT IN SOIL GOAL
No. 1 - Reduce inhalation of dust containing contaminants.	Arsenic 7.3 mg/kg Cadmium 88 mg/kg Total Chromium 112 mg/kg Chromium VI 16 mg/kg	74; or reduce total dust by 74%
No. 2 - Reduce ingestion of contaminants in soil.	Arsenic 7.3 mg/kg	81; or reduce amount of soil that can be consumed by 81%
No. 3 - Reduce potential for inhaling contaminant vapors during showering by reducing potential for contaminants to migrate to groundwater.	Trichloroethene (TCE) 5 ug/kg Tetrachloroethene (PCE) 10 ug/kg	85 (TCE); 56 (PCE); or slow migration rate from soil so reductions are achieved in groundwater
No. 4 - Reduce volatile organic chemicals concentrations in the infiltrating leachate so they do not exist in concentrations exceeding California MCLs.	TCE < 5 ug/kg PCE < 5 ug/kg 1,2-dichloroethene (1,2-DCE) < 5 ug/kg	98 (TCE); 92 (PCE); 96 (1,2-DCE); requires reducing average soil concentrations or slowing contaminant migration to groundwater
No. 5 - Reduce lead concentrations in soils to within health-based guidelines set by CAL-EPA DTSC.	Lead 174 mg/kg	92; or reduce potential for soil ingestion by 92%

MCLs = California drinking water standards maximum contaminant level.

* Concentration shown is the maximum residual soil concentration that will meet the Remedial Action Objectives.

Figure 4

How a Remedy is Selected & Implemented

EVALUATION CRITERIA

The Army, in conjunction with involved regulatory agencies and the public, will select a cleanup alternative for the area based on nine criteria used to evaluate the alternatives. The evaluation criteria have been developed to address legal requirements, as well as technical and policy considerations that have proven to be important for selecting cleanup alternatives.

Each alternative is assessed against the nine

evaluation criteria described below. The results of this assessment are used to compare the alternatives and identify the key tradeoffs among the alternatives. This approach is designed to provide decision makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for a site and satisfy legal requirements. The nine criteria are summarized in the text below.

THE NINE CRITERIA

THRESHOLD FACTORS:

Overall Protection of Human Health and the Environment

1. Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

2. Site remediation should comply with federal and State laws that apply to the project. Addresses whether or not a remedy will meet all ARARs of federal and state environmental statutes or provides grounds for invoking a waiver.

PRIMARY BALANCING FACTORS:

Short Term Effectiveness

3. Addresses the period of time needed to complete the remedy, and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until the cleanup goals are achieved.

Long Term Effectiveness & Performance

4. Refers to the ability of a remedy to maintain reliable protection of human

health and the environment over time, once cleanup goals have been met.

Reduction of Toxicity, Mobility & Volume Through Treatment (TMV)

5. Refers to the anticipated ability of a remedy to reduce the toxicity, mobility and volume of the hazardous components present at the site.

Implementability

6. Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

Cost

7. Evaluates the estimated capital, operation and maintenance costs of each alternative.

MODIFYING FACTORS:

State Acceptance

8. Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

Community Acceptance

9. Indicates whether community concerns are addressed by the remedy and whether the community has a preference for a remedy. Public comment is an important part of the final decision.

Evaluation of Cleanup Alternatives

To achieve the RAOs described above, the Army and the EPA evaluated 47 alternatives for soil remediation, using the evaluation criteria described in Figure 4. Forty-one alternatives did not satisfy one or more of the evaluation criteria. The remaining six alternatives are summarized in Table 3 and are described below:

1. No Action: This alternative would leave contaminated soils in place. This alternative is retained as a reference point for comparison with other alternatives, although it does not satisfy the nine criteria listed in Figure 4. This alternative is not preferred because it is not protective of human health and the environment, since no cleanup takes place.

Treatment Cost: \$0

Treatment Time: Not Applicable

2. Capping of Entire Burn Pits Operable Unit

This alternative involves covering the entire Burn Pits Operable Unit with a thick layer of plastic, clay, soil, and vegetation. This layer is referred to as a "cap". The purpose of the cap is to reduce exposure of the surface soils, and to impede infiltration of rain water into the contaminated soil.

Dust generated during construction of the cap would be controlled by periodically wetting the surface. Health risk to the community due to construction activities is estimated to be negligible.

Visual monitoring of the cap would be required throughout its life. However, maintenance requirements would be infrequent, and may involve repairs such as replacing eroded soil or replanting dead vegetation.

The cap would act as a thick barrier

to nearly eliminate all potential for contact with the surface soil. Therefore, it would reduce health risks due to direct contact with, or ingestion of the soil, and inhalation of dust. It would also slow migration of volatile organic chemicals to groundwater, but would not reduce the concentrations in leachate to acceptable levels. Thus, it does not provide long-term control of human exposure to potentially harmful organic chemicals in groundwater. For this reason, groundwater would be monitored for the next 30 years to detect potential impact from contaminated leachate.

A large quantity of debris is present in Unit 1. Capping would reduce potential risks posed by this debris.

Capping would not remove contaminants from the soil. Two of the metals at the site are present at hazardous levels. For these metals to be left in place, untreated, certain requirements would have to be met. These requirements include giving notice to the local regulatory agencies that hazardous chemicals are present at the site, obtaining a deed restriction, performing long-term groundwater monitoring and possibly soil monitoring at depths above groundwater, performing long-term maintenance on the cap, and providing assurance that sufficient funds have been set aside to remediate the site.

Approximate Treatment Cost: \$1,200,000

Treatment Time: Approximately 3 to 4 weeks for cap construction. Groundwater monitoring would be continued for as long as 30 years, and cap maintenance would be continued for the life of the cap.

3. In-situ Soil Ventilation of the Entire Burn Pits Operable Unit and Controls to Limit Surface Soil Exposures

This alternative would use soil ven-

tilation to extract organic chemicals from the Burn Pits Operable Unit soil. Dust would be controlled by periodically wetting the surface and access to the site would be limited, thereby reducing the potential for soil ingestion and direct contact with the soil.

A soil ventilation system pulls air through contaminated soil and withdraws soil vapors that carry the contaminants out of the soil. The contaminants can then be removed from the soil vapors or destroyed by an air emissions control device. Air emissions will be controlled by Gas Phase Carbon Adsorption—granular activated carbon that adsorbs the contaminants found in the soil vapor. Once the carbon has adsorbed as much as it can hold, it is transported to a facility where the contaminants are removed and treated so that the carbon can be re-used.

Some of the moisture normally present in the soil may be removed with the extracted vapor. This "entrained" water must be separated from the soil vapor prior to treating the air. The separated water will be treated in the Ultraviolet-Hydrogen Peroxide water treatment plant located on the SAAD facility.

Residents and business in the area will not be exposed to hazardous materials during construction or operation of the ventilation system.

After the soil ventilation has been completed, a soil sealant would be applied to the surface of Unit 1 to control dust. Continuing maintenance at the site will include use controls to avoid damaging the surface seal, site security, and re-application of the sealant annually.

Soil ventilation would reduce risks to human health from ingestion, contact with, or inhalation of vapors from volatile organic chemicals. Maintenance of dust control and use restrictions would protect human health by preventing contact with soil, inhalation

of dust, and ingestion of soil. Potentially contaminated debris would remain in the soil, and since no cap would be present to impede migration of leachate, future groundwater contamination is possible.

Soil ventilation would remove volatile organic chemicals, but would not remove other contaminants, including metals. For these metals to be left in place, untreated, certain requirements would have to be met. These requirements include giving notice to the local regulatory agencies that hazardous chemicals are present at the site, performing long-term monitoring of soils at depths above groundwater, performing long-term maintenance of dust controls, enforcing long-term access and use restrictions, and providing surface water runoff controls due to exposed contaminated soil.

Approximate Treatment Cost: \$304,000 including carbon treatment

Treatment Time: Approximately 4 months for soil ventilation. Dust control measures may require as much time as 2 weeks annually for as long as 30 years.

4. In-situ Soil Ventilation of the Entire Burn Pits Operable Unit and Capping of Unit 1 of the Burn Pits Operable Unit

Alternative 4 uses soil ventilation to remove volatile organic chemicals, and capping of Unit 1 to prevent exposure to remaining contaminants not removed by soil ventilation. Alternative 4 is identical to Alternative 3 with respect to using soil ventilation to remove volatile organic chemicals from the entire Burn Pits Operable Unit. After soil ventilation is completed, a cap would be constructed over Unit 1 to prevent exposure to the metals present there which would not be removed by soil ventilation. The cap would be designed to serve as a barrier to limit exposure to

the metals, but not to limit infiltration of rain water, since mobile contaminants would have been removed by soil ventilation.

Residents and businesses in the area would not be exposed to hazardous materials during construction. Liquid by-products of the soil ventilation system would be treated on site in SAAD's water treatment system.

Maintenance would be required for the life of the cap. However, less maintenance would be required than for the cap discussed in Alternative 2, since infiltration of rain water need not be prevented. Groundwater monitoring would not be required since remaining contaminants would not be expected to migrate to groundwater.

Soil ventilation would reduce risks to human health from ingestion of, contact with, or inhalation of vapors from volatile organic chemicals. Capping of Unit 1 and use restrictions would protect human health by preventing contact with soil, inhalation of dust, and ingestion of soil.

This alternative would not remove other contaminants, including the metals which are present at hazardous levels, PCBs, dioxins/furans, or debris. For these metals to be left in place, untreated, certain requirements would have to be met. These requirements include giving notice to local regulatory agencies that hazardous chemicals are present at the site, performing long-term monitoring of soils at depths above groundwater, performing long-term maintenance on the cap, and providing assurance that sufficient funds have been set aside to remediate the site.

Approximate Treatment Cost: \$306,000 including carbon treatment
Treatment Time: Approximately 3 to 4 weeks for implementation of cap. Cap maintenance would be continued for as long as 30 years.

5. In-situ Soil Ventilation of the Entire Burn Pits Operable Unit, Excavation of Unit 1, Soil Washing of Excavated Soil, and Backfilling Unit 1 with Treated Soil

Alternative 5 is the same as Alternative 3, except that soil ventilation would be followed by excavation of remaining contaminated soil in Unit 1, and soil-washing to remove metals. Soil ventilation would not remove metals, since they are not volatile.

After soil washing, the wash liquid would be treated on site, and the treated water would be disposed in a sanitary sewer. The wash liquid would be treated by adding chemicals that would cause the dissolved metals to settle out. The residual sludge containing the precipitated metals would be considered a hazardous waste, and would be hauled off site for treatment and disposal. The off-site treatment and disposal could consist of either: 1) stabilization and disposal in a certified hazardous waste landfill, or 2) recovery of metals at a licensed smelter. The final treatment and disposal option would be the decision of the soil-washing contractor selected by the Army. No air emissions are expected during the treatment of the wash liquid.

After excavating, soil samples would be collected from the excavation bottom and sides to verify that contaminated soils have been removed. Samples of the treated soil would be chemically analyzed to verify that treatment was successful. The treated soil would be backfilled in the excavation. Dust would be controlled during excavation, and air would be monitored to evaluate whether the dust control measures are successful.

The debris present in Unit 1 would have to be segregated from the soil, and would be decontaminated using either dry-wiping, washing, or steam-cleaning procedures. Soil and liquid produced during the decontamination procedures would also be washed on site.

Entrained water from the soil ventilation system would be treated on site in SAAD's water treatment system.

Residents and businesses in the area would not be exposed to hazardous materials during construction, with the possible exception of a slight, temporary increase of dust and organic vapors during excavation and construction of the soil ventilation system. Dust control measures would be used during excavation and air monitoring performed to evaluate whether the measures are effective.

Long-term maintenance and monitoring would not be required, as for Alternatives 2 through 4. However, this alternative would be difficult to implement because of the need to segregate out the debris. In addition, contractors with soil-washing experience are rare, and the cost is high. Preliminary studies suggest that the soil-washing process is only partially effective in reducing dioxins/furans and metals to levels necessary to meet the RAO goals. Extensive testing of the system would be required in order to demonstrate that it will work for remediation of this area.

Soil ventilation would reduce risks to human health from ingestion, contact with, or inhalation of vapors from volatile organic chemicals. Soil washing would reduce risk to human health by inhalation, contact with, or ingestion of metals found in Unit 1. Soil washing is not expected to affect the concentrations of dioxins/furans or PCBs in the soil, and would not limit human exposures to these chemicals. However, dioxins/furans remaining in the soil at the site are below levels recommended for cleanup by the EPA.

Approximate Treatment Cost: \$13,203,000 including carbon treatment
Treatment Time: Approximately 2 to 4 months for soil ventilation, and approximately 2 months to excavate Unit 1 and complete soil washing.

Table 3

Summary Comparison of Remedial Alternatives, Burn Pits Operable Unit

ALTERNATIVE	SELECTION CRITERIA						
	OVERALL PROTECTIVENESS	COMPLIANCE WITH ARARs	LONG-TERM EFFECTIVENESS PERMANENCE	REDUCTION OF TMV	SHORT-TERM EFFECTIVENESS	IMPLEMENTABILITY	ESTIMATED COST
1 No Action.	Does not protect human health or environment.	Not Applicable, applies only to CERCLA actions.	Is not a long-term or permanent solution.	Does not reduce toxicity, mobility, or volume.	Effective, since no one is currently exposed to chemicals in soil of OU.	Easily implementable	\$0
2 Capping Units 1 - 5 (entire Burn Pits OU).	Reduces health risks due to direct contact with, or ingestion of soil, and dust inhalation.	Complies with ARARs.	Cap would need to be maintained. Containers of chemicals may exist in pits and could deteriorate and release contents in the future. VOCs expected to continue degrading groundwater.	Does not reduce toxicity or volume, but will reduce mobility.	Implementation will not greatly increase exposure to soil and/or dust. Groundwater contamination does not currently extend to active drinking water wells.	Easily implementable	\$1,200,000
3 Soil Venting of Units 1 - 5 Dust/Access Controls. (Vapor Treatment by carbon adsorption).	Protects ground water from current soil contaminants. Reduces health risks due to soil ingestion and direct contact with soil.	Complies with ARARs if soil exposure is adequately controlled.	Long-term maintenance of dust access controls needed. Land use restrictions needed. Containers of chemicals may exist within the pits and could deteriorate and release contents in the future.	Reduces toxicity, mobility and volume of volatile organics. Dust control somewhat reduces mobility of metals and dioxins/furans, but no reduction in the toxicity or volume of these contaminants is effected.	Currently effective due to limited current exposures. Implementation would not greatly increase potential exposures.	Easily implementable.	\$304,000
4 Soil Venting of Units 1 - 5 (entire Burn Pits OU), Cap Unit 1.	Protects human health and the environment from contaminants currently known to exist in the soil.	Complies with ARARs.	Venting provides permanent remedy for VOCs. Cap would need to be maintained. Containers of chemicals may exist within the pits and could deteriorate and release contents in the future.	Reduces toxicity, mobility, and volume of VOCs. Does not reduce toxicity or volume of metals or dioxins and furans. The cap will further reduce mobility and the potential for exposures to occur.	Effective, will reduce potential exposures to soil and/or dust, with little disturbance to the existing OU. Air monitoring of vapor emissions will be performed to confirm protectiveness.	Easily implementable. Requires two systems but each is easy to implement.	\$306,000
5 Soil Venting of Units 1 - 5 (entire Burn Pits OU). Excavate Unit 1. Soil Wash and Backfill.	Protects human health and the environment from VOCs and metals.	Complies with ARARs.	Venting provides permanent remedy for VOCs. Soil Washing is expected to provide permanent remedy for metals.	Reduces toxicity, mobility, and volume of VOCs and metals. Will not significantly affect dioxins/furans.	Potential for dust exposures during excavation. Dust control and monitoring worker health & safety, and air emission monitoring will be performed.	Implementation may be difficult. Pilot test required. Excavated soil requires careful screening.	\$13,203,000
6 Soil Venting of Units 1 - 5 (entire Burn Pits OU). Excavate Unit 1. Stabilize and Backfill.	Protects human health and the environment.	Complies with ARARs.	Venting provides permanent remedy for VOCs. Stabilization is expected to provide permanent remedy for metals and dioxins/furans.	Reduces toxicity and mobility of metals, and dioxins/furans. Destroys VOCs.	Potential for dust exposures during excavation of Unit 1. Dust control and monitoring, worker health & safety, and air emission monitoring will be performed.	Fairly easy to implement. Excavated soil requires screening.	\$2,811,000

TMV = Toxicity, Mobility, Volume.

6. In-situ Soil Ventilation of the Entire Burn Pits Operable Unit, Excavation of Unit 1, Stabilization of Excavated Soil, and Backfilling Unit 1 with Stabilized Soil

Alternative 6 is the same as Alternative 3, except that soil ventilation would be followed by excavation and treatment of Unit 1 soils to stabilize the non-volatile contaminants. Stabilization would be achieved using additives, such as cement and silica. The stabilized soil would be replaced in the excavation. After excavating, soil samples would

be collected from the excavation bottom and sides to verify that contaminated soils have been removed. Following treatment of the soil to stabilize the contaminants, samples would be collected to evaluate the integrity of the stabilized mass.

The debris in Unit 1 would be handled according to the requirements of 40 CFR Part 268. Soil and liquid produced during decontamination of the debris would also be stabilized.

Residents and businesses in the area would not be exposed to hazardous

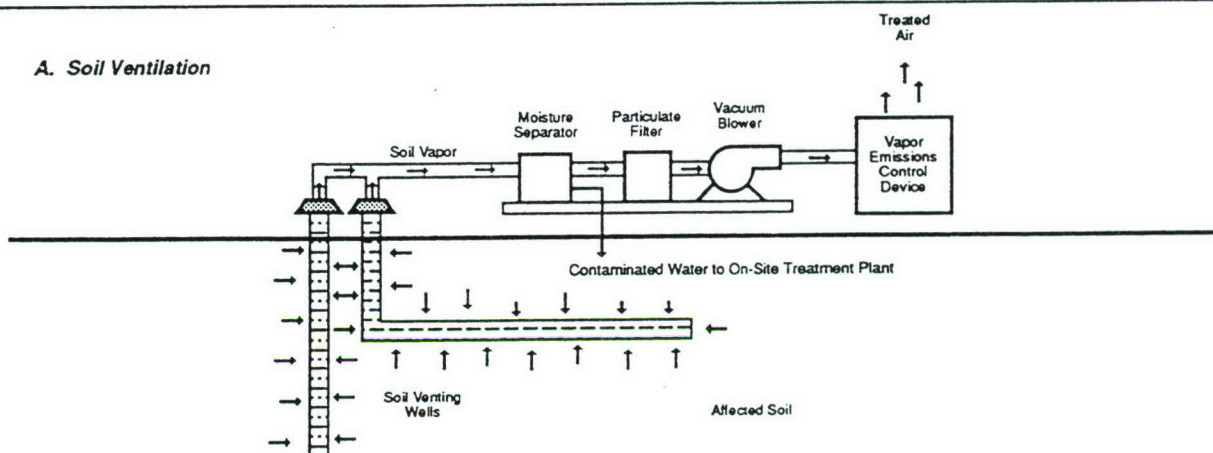
materials during construction, with the possible exception of a slight, temporary increase of dust or organic vapors during excavation. However, dust control measures such as periodically wetting the surface, would be used during excavation, and air monitoring would be performed to evaluate whether the measures are effective.

If remediation is performed using Alternative 6, long-term monitoring of the Burn Pits Operable Unit would not be required.

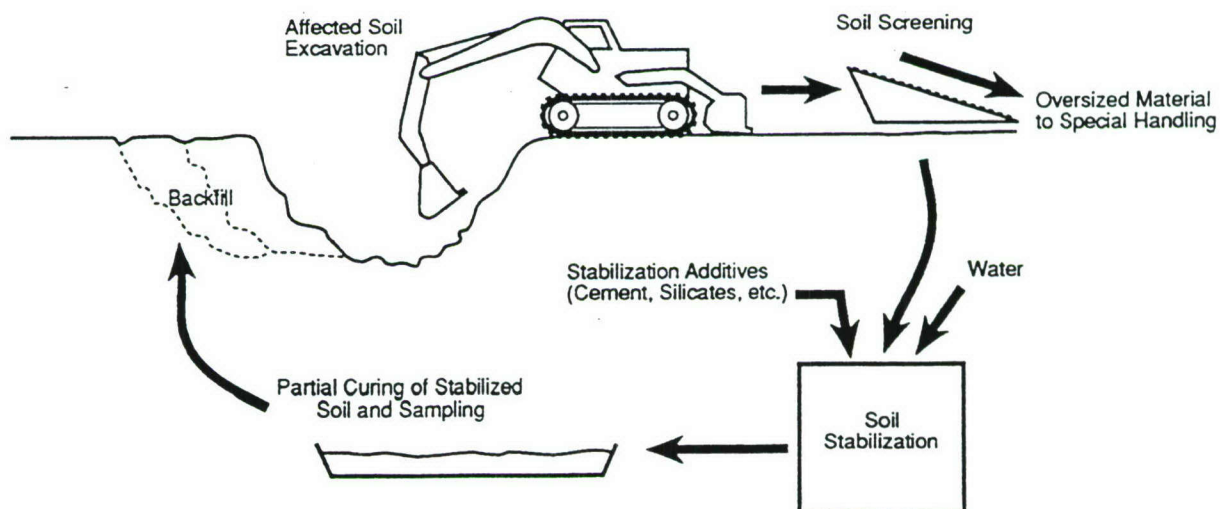
Soil ventilation would reduce the

Figure 5: The Army's Preferred Alternative for Soil Cleanup

A. Soil Ventilation



B. Soil Stabilization



risk posed by volatile organic chemicals that could be inhaled, ingested or contacted from soil or ground water. The stabilization process would bind the metals into a concrete mix that would not allow human exposure by contact, ingestion, or inhalation of dust. The leachability of the contaminants would be further reduced so that they would not migrate to ground water. Stabilization would also limit human exposures to PCBs, and dioxins/furans. Although metals would remain on site, they would be in a stabilized mass.

Approximate Treatment Cost: \$2,811,000 including carbon treatment
Treatment Time: Approximately 2 to 4 months for soil ventilation, and approximately one to two months for soil excavation and stabilization.

Preferred Alternative for Soil Cleanup

The Army is proposing Alternative 6 for the cleanup of soil contamination (see Figure 5). Alternative 6 is protective of human health and the environment, and complies with all Applicable, Relevant, and Appropriate Requirements (ARARs). Soil ventilation provides a permanent solution and long-term protection of human health and the environment from volatile organic chemicals. Stabilization is recommended because it provides overall protection of human health and the environment, is technically practical, is effective in the long-term, complies with ARARs, is implementable, and is cost-effective.

The preferred alternative provides the best balance of tradeoffs with respect to the nine evaluation criteria. Some major advantages of Alternative 6 are that: hazardous materials do not need to be transported off site, with the exception of used carbon, which is a solid that can be safely transported; volatile organic chemicals are perma-

nently removed from the site; and metals and dioxins/furans are permanently stabilized. The preferred alternative will cost more than Alternatives 3 and 4, but satisfies the criterion for long-term effectiveness and permanence better than Alternatives 2, 3, or 4. The

preferred alternative reduces toxicity, mobility, and volume of contaminants more effectively than Alternative 5. Additionally, Alternative 6 would be more easily implemented than Alternative 5.

INFORMATION REPOSITORIES

The information repositories include site-related documents, including the cleanup plan for the Burn Pits site. The information repositories are available for public review at:

California State University
Sacramento Library
2000 Jed Smith Drive
Sacramento, CA 95819
(916) 278-6291

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, California
95813-5052

George Sim Community
Center
6207 Logan Street
Sacramento, California
95820

FOR FURTHER INFORMATION

The Superfund program places a high value on community input in addressing hazardous cleanups of hazardous substances at Superfund sites. Your comments are invited and encouraged. If you have any questions or concerns about the cleanup activities at Sacramento Army Depot, please direct them in writing to one of the following offices:

Richard R. Dyer
Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
(916) 388-2324

Daniel Oburn
Environmental Protection Specialist
IRP Program Manager
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, California 95813-5052

Marlon Mezquita
Project Manager
U.S. Environmental Protection Agency
Region IX-H-9-2
75 Hawthorne Street
San Francisco, California 94105

Gordon Stephens
Project Manager
Department of Toxic Substances
Control
10151 Croyden Way
Sacramento, California 95827

Michael Mosbacher
Project Manager
Regional Water Quality Control Board
3443 Routier Road
Sacramento, CA 95827

Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

Public Comment Period:

During the public comment period, August 3 through September 1, 1992, you are encouraged to comment on the Burn Pits area cleanup alternatives at Sacramento Army Depot. Written comments may be sent to Richard R. Dyer, Public Affairs Office, Sacramento Army Depot, 8350 Fruitridge Road, Sacramento, CA 95813-5012. Mr. Dyer can be reached at (916) 388-2324.

Community Meeting:

You are encouraged to attend an upcoming public meeting regarding the Burn Pits site cleanup. The meeting will be held at the George Sim Community Center, 6207 Logan Street (off Lemon Hill Avenue), Sacramento, at 7:00 p.m. on August 13, 1992. At this meeting, state and federal representatives involved in the project will describe the proposed cleanup plan. Community members will have the opportunity to ask questions and comment on the environmental cleanup program at the Sacramento Army Depot.

**INSTALLATION / RESTORATION PROGRAM
SACRAMENTO ARMY DEPOT**

RCRA-permitted Storage Facility



SACRAMENTO ARMY DEPOT

FACT SHEET

January 1993

Background

Sacramento Army Depot (the depot) is a United States Military installation located seven miles southeast of downtown Sacramento in the city and county of Sacramento.

The depot applied to the U.S. Environmental Protection Agency (EPA), Region IX and Department of Toxic Substances Control (DTSC) of the California EPA for permits authorizing the storage of hazardous wastes in containers.

a Class 1 Modification to the current RCRA Storage Permit has been submitted to EPA and DTSC in accordance with Title 22, California Code of Regulations, Section 66270.42(a) to clarify the scope of the RCRA storage permit.

Waste and Management Activities

Wastes are generated from a multitude of maintenance and support functions at the depot. Major generation points include a metal plating shop, industrial graphics, industrial wastewater

treatment plant, and automotive shops.

These processes have generated varying quantities of waste oils, solvents, paint liquids and solids, plating wastes, dry cell batteries, non-solvent toners, and Industrial Waste Treatment Plant sludge.

The depot manages hazardous waste mostly in 55-gallon Department of Transportation

(DOT) approved drums.

Defense contractors reuse, recycle or dispose of these wastes at permitted, off-site hazardous waste treatment and/or disposal facilities.

Approval of the modification to the existing hazardous waste storage permit would authorize the depot to store, at their Hazardous Waste Container Storage Area (HWCSA), only hazardous waste generated on-site. The HWCSA has a maximum storage capacity of 400 containers of 55 or less gallons. Figure 1 illustrates the

location of the HWCSA.

Public Participation

The permit application, permits, modification and fact sheets pertaining to this RCRA issue are available for review at the following information repository:

Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, CA 95813
9:00 am - 3:00 pm
Monday through Friday

The full Administrative Record pertaining to this matter is available for review Monday through Friday from 9:00 am until 4:00 pm at:

Department of Toxic Substances Control
Region I
10151 Croydon Way, Suite 3
Sacramento, CA 95827-2106
Attn: Mr. Jeff Van Slooten
(916) 255-3742

Section 7004(b) of RCRA and 40 CFR 124.10 and Section 66271.9, Title 22, CCR require that the public be given a chance to comment on this action. If you have any questions or concerns regarding this fact sheet or any RCRA activities at Sacramento Army Depot, please submit comments in writing to one of the following offices:

Ms. Roxanne Yonn
Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813
(916) 388-2324

Mr. Jeff Van Slooten
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 255-3742

This modification is effective within 30 days of this notice, and any person may request DTSC to review the modification.

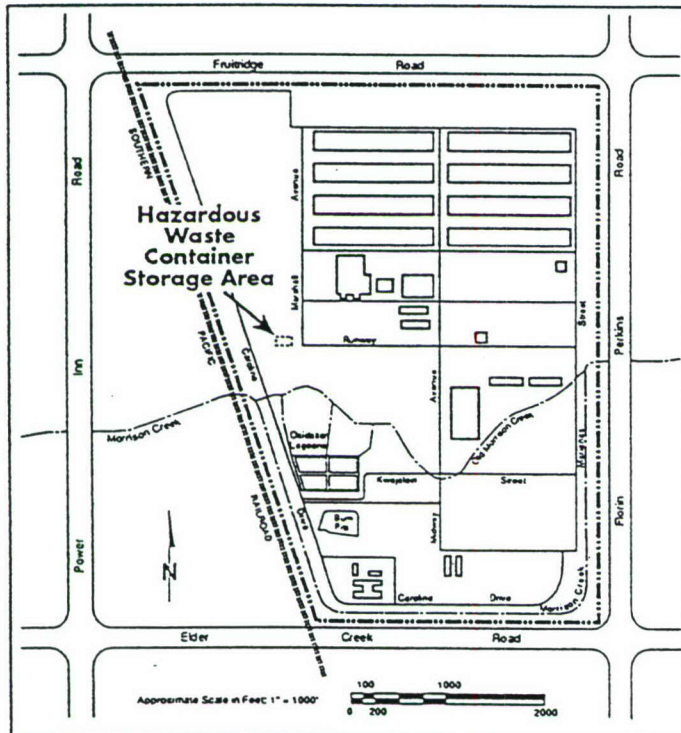


Figure 1

Current Activities

The Sacramento Army Depot was issued a Resource Conservation and Recovery Act (RCRA) Storage Permit by both the EPA and DTSC in July 1992 to store hazardous waste. However, due to some typographical errors in the Part B Permit Application and the permit, storage of hazardous waste under current permit conditions is limited to less than what is intended by the Permit Application. Therefore,

If you did not receive this fact sheet in the mail, and would like to be added to the Sacramento Army Depot Environmental Fact Sheet mailing list, please fill out this coupon and mail to: **Sacramento Army Depot Mailing List**,
C/o Randi Grinsell · Kleinfelder, Inc. · 3077 Fite Circle · Sacramento, CA 95827-9795.

Name: _____

Address: _____

City/Zip: _____

Printed on Recycled Paper

Roxanne Yonn, Public Affairs Office

Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

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Permit No. 2732
Sacramento, CA

National Environmental Policy Act (NEPA)



US Army Corps
of Engineers



NOTICE OF AVAILABILITY of the

Environmental Assessment (EA) and Finding of No Significant Impact (FNSI) for Interim Land Use Outgranting at Sacramento Army Depot, California

The Army has prepared an Environmental Assessment (EA) to analyze the potential effects of three outgranting program alternatives for leasing Sacramento Army Depot facilities to private or public entities.

The review period for the EA and Finding of No Significant Impact (FNSI) will end on February 25, 1994. Public comment on the EA will be considered in the decision making process.

Copies of the EA and FNSI are available for review at the following repositories: Sacramento Army Depot Visitor Control Building, 8350 Fruitridge Road, Sacramento, CA 95813, 9:00 a.m. - 3:00 p.m. Monday through Friday; Sacramento Central Public Library, Government Documents Department (3rd Floor), 828 I Street, Sacramento, CA 95814, 11:00 a.m. - 6:00 p.m., Tuesday through Saturday; California State University, Sacramento, Library, 2000 Jed Smith Drive, Sacramento, CA 95819, call 278-6926 for hours open; and George Sim Community Center, 6207 Logan Street, Sacramento, CA 95824, 8:00 a.m. - 8:00 p.m., Monday through Friday, and 10:00 a.m. - 2:00 p.m., Saturday. Copies of the FNSI can be obtained by writing or calling the U.S. Army Corps of Engineers, Sacramento District, ATTN: Wandell Carlton, CESPK-ED-M, 1325 J Street, Sacramento, CA 95814-2922, (916) 557-7424.

Questions or comments on the EA may be referred to the U.S. Army Corps of Engineers at the same address and telephone number.



US Army Corps
of Engineers



NOTICE OF PUBLIC WORKSHOP for the

Sacramento Army Depot Disposal and Reuse Draft Environmental Impact Statement (EIS)

The U.S. Army Corps of Engineers will hold a public workshop on February 15 at 7 p.m. at George Sim Community Center, 6207 Logan Street, Sacramento.

The purpose of the workshop is to receive comments from the public on the Sacramento Army Depot Draft Environmental Impact Statement (EIS), which addresses the Army's disposal actions, as well as reuse alternatives developed with input from the city of Sacramento Reuse Commission.

Copies of the Draft EIS are available for review at the following repositories: Sacramento Army Depot Visitor Control Building, 8350 Fruitridge Road, Sacramento, CA 95813, 9:00 am - 3:00 pm Monday through Friday; and the Sacramento Central Public Library, Government Documents Department (3rd Floor), 828 I Street, Sacramento, CA 95814, 11:00 am - 6:00 pm, Tuesday through Saturday; California State University, Sacramento, Library, 2000 Jed Smith Drive, Sacramento, CA 95819, call 278-6926 for hours open; and George Sim Community Center, 6207 Logan Street, Sacramento, CA 95824, 8:00 a.m. - 8:00 p.m., Monday through Friday, and 10:00 a.m. - 2:00 p.m., Saturday.

The public is invited to submit oral or written comments at the meeting or to send written comments to the U.S. Army Corps of Engineers, Sacramento District, CESPK-ED-M (ATTN: Wandell Carlton), 1325 J Street, Sacramento, CA, 95814-2922. The comment period ends March 21, 1994. For additional information or to be placed on the mailing list, please call Wandell Carlton at (916) 557-7424.

Environmental Impact Study/Public Participation

FACT SHEET



EPA

Sacramento Army Depot

February 1994

Number 5

CORPS OF ENGINEERS TO HOST EIS MEETING

A meeting will be held on Tuesday, February 15, 1994 beginning at 7:00 p.m. at the George Sim Community Center, 6207 Logan Street. The meeting will be hosted by the Sacramento District Corps of Engineers to discuss the Sacramento Army Depot draft Environmental Impact Study (EIS). The community is encouraged to attend and ask questions and comment on the EIS.

Due to closing, excess property will be made available to the community by the Sacramento Army Depot. Options for disposal and reuse of the property are analyzed in the EIS, which is available for public comment at the Information Repositories.

Throughout preparation of the EIS, public involvement in the federal decision making process is encouraged. Comments from concerned individuals, agencies, and organizations are welcome at any time. A public involvement plan has been established to distribute accurate and timely information to the community about the disposal and reuse process, develop ongoing communication with the community, encourage community involvement, and monitor and respond to community concerns.

The entire Sacramento Army Depot installation is currently listed on the National Priority List as a Superfund site. The depot expects to be removed from the list in early 1995. Cleanups of contaminated sites are ongoing activities. All sites will be certified clean, or in the process of being cleaned, before they are available for reuse, transfer, or sale.

The depot has transferred its maintenance activities to other DoD installations on a competitive basis. Structures, utilities, and operation and maintenance systems will be

put into a caretaker status until property disposal decisions are implemented. The Army is preparing to lease excess property during the interim period prior to disposal.

A real estate screening process is being used to determine who is interested in the available land. After interest in lands has been identified, practical real estate procedures will be used to determine the proper disposal of available lands.

The Army has worked in cooperation with federal, state and local agencies and the city of Sacramento's Sacramento Army Depot Reuse Commission to determine a range of reasonable reuse alternatives. Five reuse alternatives have been developed: employment center (high intensity uses), heavy commercial/industrial (medium-high intensity uses), heavy commercial (medium intensity uses), public sector (low intensity uses); and a no action/caretaker alternative.

PUBLIC PARTICIPATION - MAKE THE CHOICE

Public Participation is an important part of the Sacramento Army Depot's environmental cleanup program. The depot is committed to public involvement throughout the environmental cleanup process. The depot has established several activities tailored to encourage two-way communication between the depot and the community working or living near the site.

You can become involved with site cleanup activities and decisions, both formally, and informally. Here are some ways you can become involved:

Contact the Depot Directly

The Public Affairs Representative for the Environmental Management Division is

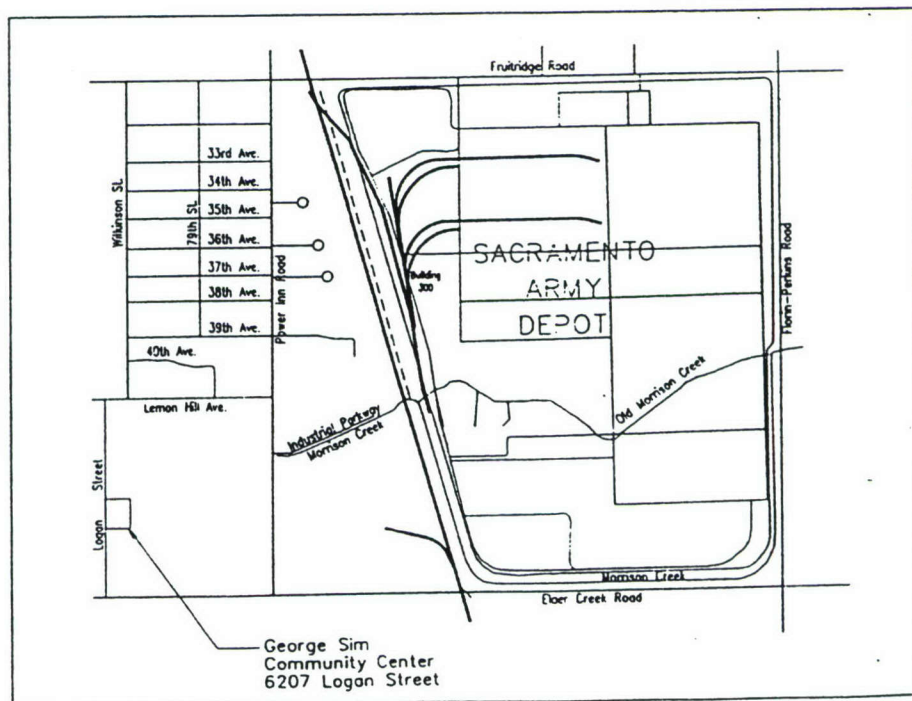


Illustration 1: Meeting Location Map

Roxanne Yonn. She is available to answer questions and solve problems Monday through Friday, 8:00 a.m. to 3:30 p.m. Her phone number is (916) 388-2324, fax (916) 388-3619.

Contact Your Public Representative

Muriel Strand and Elmo Slider represent the public as members of the Restoration Advisory Board (RAB) and are members of the Reuse Committee. The community representatives are invited to monthly RAB meetings to insure that your concerns are carefully considered during the decision making process. If you have any questions, feel free to contact one of your community representative or local elected officials.

Read Newsletters and Fact Sheets

Newsletters and fact sheets are distributed several times during the year to community members on the depot environmental mailing list. These newsletters and fact sheets provide information on current and proposed environmental activities, community involvement opportunities and announcements of upcoming public meetings. Past copies can be requested through the depot Public Affairs Office.

Visit the Information Repository

To keep informed, you can visit the information repository. The information repository contains many useful documents describing past and present environmental activities performed at the depot. As documents are completed during the cleanup process, they are made available for public review. These documents are located at the California State University, Sacramento Library, Science & Technical Reference Department, 2000 Jed Smith Drive, Sacramento California, (916) 278-6373 and the Sacramento Army Depot's Visitors Center, 8350 Fruitridge Road, Sacramento, California, (916) 388-2211. The George Sim Community Center, 6207 Logan Street, Sacramento, California, (916) 277-6161, contains current documents only.



Illustration 2: Community Meeting

Participate during the Public Comment Period

Once a contaminated area has been investigated, the Army will evaluate possible solutions for cleanup. These solutions are summarized in the proposed plan. Proposed plans are mailed to those on the mailing list and will be available for review at the information repositories. A public comment period, announced in the local paper and the proposed plan, gives the community a chance to comment on the proposed methods and express any concerns. Comment periods will run for 30 days. At the end of the comment period, all comments and concerns will be addressed and a final decision will be made.

Attend A Public Meeting

The depot hosts several public meetings throughout the year. These meetings provide a forum to explain project turning points, respond to community questions, and respond to community concerns. These meetings offer an informal opportunity for the public to talk to depot officials and agency representatives about any environmental issues or concerns you have about the depot. Notices of upcoming public

meetings are posted in the *Sacramento Bee*.

Request a Speaker or Tour for your Club or Organization

The depot has several representatives available to speak to your group, club or organization. These people are available to talk to your group about cleanup issues and answer your questions about the depot. If you or your group would like to learn more about the depot's environmental program, contact Roxanne Yonn (916) 388-2324 to arrange for a speaker. Depot tours can also be requested.

View the Depot Videos

A collection of videos detailing the history of the depot, its mission and the environmental process have been developed and are available for viewing. Contact the Public Affairs Office for viewing arrangements.

Become Familiar with the Glossary

A glossary defining some familiar and some not so familiar environmental terms has been developed and is available through the Depot's Environmental Management Di-

vision or the Public Affairs Office.

Join the Mailing List

The environmental mailing list is designed to keep concerned citizens informed through the use of fact sheets, newsletters and public notices. If you would like to be included on the mailing list, fill out the coupon provided and mail to: Sacramento Army Depot Mailing List, C/O Randi Grinsell, Kleinfelder, Inc., 3077 Fite Circle, Sacramento, CA 95827-9795.

Restoration Advisory Board (RAB)

Under recent guidance handed down from the Department of Defense, Restoration Advisory Boards (RAB) must be established at closing and realigning bases where property will be available for transfer to the community. This guidance directs installations to involve the community working in, or living near, a closing base in the cleanup program. The RAB will act as a forum for discussion and exchange of cleanup information between the community, government agencies and the U.S. Army.

The RAB members meet monthly to dis-

cuss progress of the depot's cleanup program. The RAB members consist of Dan Oburn of the Sacramento Army Depot Environmental Management Division, Guy Brown, Base Transition Coordinator of the Sacramento Army Depot, Marlon Mezquita of the Environmental Protection Agency (EPA), Barbara Marcotte of Cal-EPA, Muriel Strand (community representative) and Elmo Slider (community representative). Other key participants include the Regional Water Quality Control Board, Sacramento District Corps of Engineers, contactors and various elected officials.

A summary of the meeting minutes will be distributed to the RAB members and made available to the public through the Information Repository. Copies may also be obtained by calling your community representative directly.

Community members are encouraged to contract their community representative to receive accurate and timely information regarding issues discussed in the meetings. If you wish to participate in the RAB meetings, you may contact Roxanne Yonn at the Sacramento Army Depot Public Affairs Office, (916) 388-2324. She can inform you of the next meeting and where it will be held.

Glossary

DoD - United States Department of Defense

Environmental Impact Study (EIS) - A document required of federal agencies by the National Environmental Policy Act (NEPA) for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and lists alternative actions.

National Priority List (NPL) - EPA's list of the most serious hazardous wastes sites identified for possible long-term remedial action under Superfund. A site must be on the NPL to receive money from the Trust Fund for remedial action. The list is based primarily on the score a site receives from the Hazardous Ranking System. EPA is required to update the NPL at least once a year.

Name: _____

Address: _____

City/Zip: _____

If you did not receive this fact sheet in the mail, and would like to be added to the Sacramento Army Depot Environmental Fact Sheet mailing list, please fill out this coupon and mail to:

Sacramento Army Depot Mailing List
c/o Randi Grinsell
Kleinfelder, Inc.
3077 Fite Circle
Sacramento, CA 95827-9795

Roxanne Yonn, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

If you have any questions or concerns regarding this fact sheet or any of the environmental activities at the Sacramento Army Depot, please submit comments in writing to one of the following offices:

Roxanne Yonn, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
(916) 388-2324

Barbara Marcotte, Calif. Environmental
Protection Agency
Department of Toxic Substances Control
10151 Croydon Way #3
Sacramento, CA 95827
(916) 255-3747

Marlon Mezquita, U.S. Environmental
Protection Agency
Superfund, Federal Facilities
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2393





DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
INSTALLATIONS LOGISTICS AND ENVIRONMENT
110 ARMY PENTAGON
WASHINGTON DC 20310-0110



January 13, 1995

MEMORANDUM FOR THE SECRETARY OF THE ARMY

SUBJECT: Information for Members of Congress (IMC)
on the Notice of Availability (NOA) of the
Record of Decision for the Final
Environmental Impact Statement (FEIS) for
Sacramento Army Depot (SAAD), Sacramento,
California

The purpose of this memorandum is to inform you
that I have approved release of the attached IMC for
the subject action.

The NOA is being published in the Federal Register
because base closings are of national interest.

The ROD states the Army's decision is to dispose
of excess properties at SAAD and summarizes the
environmental and socioeconomic consequences of
disposal and reuse on the surrounding communities.

The NOA and IMC have been coordinated with
concerned offices within the Office of the Secretary of
Defense and the Army. The comments received have been
incorporated into the documents as appropriate.

Publication of the NOA in the Federal Register
will be accomplished as soon as Congress is notified.

Robert M. Walker
Assistant Secretary of the Army
(Installations, Logistics & Environment)

Attachment



DEPARTMENT OF THE ARMY
OFFICE OF THE SECRETARY OF THE ARMY
WASHINGTON, DC 20310

INFORMATION FOR MEMBERS OF CONGRESS

The Department of the Army will announce the availability of the Record of Decision (ROD) on the Final Environmental Impact Statement (FEIS) for the disposal and reuse of Sacramento Army Depot (SAAD), Sacramento, California.

In accordance with the procedures of the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), the Defense Base Closure and Realignment Commission (Commission) reviewed recommendations for the closure and realignment of military installations submitted by the Secretary of Defense. On July 1, 1991, the Commission forwarded its report to the President, who approved the report and forwarded it to Congress on July 10, 1991. A recommendation to close SAAD was included in the Commission's report.

Public law 101-510 exempted the decision making process of the Commission in recommending installations to be closed or realigned from the provisions of the National Environmental Policy Act of 1969. The law also exempted the Department of Defense from considering the need for closing, realigning or transferring functions and from looking at alternative installations to realign or close. The Army still must prepare environmental impact analyses to assess the environmental effects of property disposal and the environmental effects of potential reuse of the property after disposal. The FEIS met that requirement.

This ROD allows the Army to initiate action to dispose of SAAD's excess property and establish a U. S. Army Reserve enclave.

For more information, or to obtain a copy of the ROD, contact Mr. Wandel Carlton, Sacramento District, U.S. Army Corps of Engineers, 1325 J Street, Sacramento, CA 95814-2922, or call (916) 557-7424.

FURNISHED BY:
Office, Chief of Legislative Liaison

**SACRAMENTO ARMY DEPOT DISPOSAL AND REUSE
ENVIRONMENTAL IMPACT STATEMENT
RECORD OF DECISION**

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
INSTALLATIONS, LOGISTICS AND ENVIRONMENT
110 ARMY PENTAGON
WASHINGTON DC 20310-0110

**SACRAMENTO ARMY DEPOT DISPOSAL AND REUSE
ENVIRONMENTAL IMPACT STATEMENT
RECORD OF DECISION**

In my capacity as the Assistant Secretary of the Army for Installations, Logistics and Environment, and based on the analysis contained in the Final Environmental Impact Statement (FEIS) for Sacramento Army Depot disposal and reuse, I have determined that the FEIS adequately addresses impacts of the Army's actions relating to the disposal of property at Sacramento, California, on the biological, physical, and cultural environment. As a result of this Record of Decision (ROD), the Army will proceed to dispose of excess property at the Depot, while retaining an Army Reserve enclave for continued use by the Army Reserve and the California Army National Guard.

In making my decision, I have considered the transcripts of scoping meetings, public hearings, and all verbal and written comments received during the public comment periods associated with the preparation of the FEIS. In addition, I have considered the results of real estate screening and continued coordination with the City of Sacramento's Reuse Commission and other federal, state, and local agencies and public groups.

Clarification is provided below as to the scope of this ROD and process of implementation. Additional information regarding the proposed action and alternatives, and associated environmental consequences and mitigation measures, can be found within the FEIS.

BACKGROUND

The process for closure of military installations was established in the Defense Base Closure and Realignment Act of 1990 (1990 Base Closure Act), Public Law 101-510. The Defense Base Realignment and Closure Commission's 1991 recommendations for realignment and closure, commonly referred to as BRAC 91, included a provision that the Sacramento Army Depot, California, be closed no later than July 1997. The Sacramento Army Depot subsequently ceased operations in September 1994.

The 1990 Base Closure Act specifies that the National Environmental Policy Act (NEPA) is applicable to base closures during the process of property disposal. In addition, review under the California Environmental Quality Act (CEQA) is required for any future reuse of lands transferred to the City of Sacramento. To satisfy the latter requirement, the City of Sacramento has prepared the Sacramento Army Depot Reuse Plan, Environmental Impact Report (EIR). The Draft EIR (June 1994) was used extensively in the development of the Army FEIS. The Final EIR was certified by the City (Resolution #94-647) on November 1, 1994.

PROPOSED ACTION AND ALTERNATIVES

The proposed action is the disposal of 426 acres of excess property made available by the closure of the Sacramento Army Depot. The Army will retain approximately 61.4 acres for a Reserve enclave. The Reserve enclave contains the Army Reserve Training Center on 39.1 acres and the California Army National Guard (ARNG) on 10.3 acres. This totals 49.4 acres. In addition, the ARNG would receive a 12-acre uneconomical remnant for a total of 22.3 acres.

Under the federal screening process, the Navy/Marine Corps Reserves would receive 19.2 acres for use as a Reserve Training Center. Pre-disposal actions include the installation of caretaker status, remediating contaminated sites, and issuing interim licenses or leases.

The Army has three alternatives for its disposal action: provide encumbered title, provide unencumbered title, or retain the property in caretaker status (no action). It has been determined that providing unencumbered title would delay disposal of the property and result in additional cost to the Army without providing substantial benefit. Therefore, this alternative was dropped from further consideration, and all reuse alternatives assume that the property would be disposed of with encumbered title.

In coordination with the City of Sacramento, the Army developed several reuse alternatives:

- Alternative 1: Employment Center (High Intensity Reuse)
- Alternative 1R: Preferred Alternative (Medium Intensity Reuse)
- Alternative 2: Heavy Commercial/Industrial (Medium-High Intensity Reuse)
- Alternative 3: Heavy Commercial (Medium Intensity Reuse)
- Alternative 4: Office/Administrative (Low Intensity Reuse)

Each of these alternatives includes the Army's retention of the Reserve enclave and disposal of excess property not retained by the Army.

A no-action/caretaker (Alternative 5) was also identified. Under this alternative, the Army would retain ownership of the property and place all but the Reserve enclave and the Navy/Marine Reserve property in caretaker status.

ENVIRONMENTAL CONSEQUENCES

Alternatives 1 and 2 provide more economic development potential, but they have significant adverse traffic impacts that might result in violations of the Federal Clean Air Act and development that might violate the Endangered Species Act. Alternatives 3 and 5 are more

environmentally benign, but do not create many job opportunities. Alternative 1R maximizes the employment potential in balance with protecting the environment.

Pre-disposal implementation of caretaker status could result in utility system deterioration and reduced security and facility maintenance. Some portions of the Sacramento Army Depot may remain in caretaker status long-term until contaminated areas can be cleaned. The consequences of any proposed interim outgrant agreement will be independently evaluated under separate NEPA documentation for the specific outgrant. Analysis of the closure actions leading to downsizing the installation and establishing interim caretaker status is not within the scope of this FEIS/ROD.

Beneficial effects of disposal of the Depot property include the addition of privately-owned land to the local tax base. Potential adverse effects include the irreversible and irretrievable commitment of resources (e.g., cultural, biological) to the new owners. Compliance by the new owners with local laws, ordinances, regulations, and statutes will be required to protect such resources.

Impacts from the establishment of the Reserve enclave could result from demolishing buildings that may contain lead-based paint, asbestos or other potentially hazardous materials. Debris and other waste generated from demolition that is classified as hazardous waste will be disposed of appropriately.

Reuse of surplus land at the Sacramento Army Depot will not be an Army action; however, impacts of reuse are considered indirect effects of the Army's disposal action and were analyzed in the FEIS. A number of potential environmental impacts were identified for the five reuse alternatives (see Attachment 1). Based on this analysis, Alternative 5 (No Action) is the "Environmentally Preferable Alternative" (i.e., least adverse effects). However, neither this alternative, nor Alternatives 3 through 5, can fully satisfy the objectives of the project by providing additional employment. Alternative 1R was identified as the "Preferred Alternative" as it meets the project objectives of disposal of excess property and provides substantial new employment, while having no unmitigatable significant impacts. Identified mitigation measures for this and the other reuse alternatives are summarized in Attachment 2.

IMPLEMENTATION

During the pre-disposal period, the Army will maintain all utility systems (i.e., water, wastewater, electric, natural gas, telecommunications, roads, and storm drainage) at the Depot and will provide for continued maintenance of structures, landscaping, and security. In addition, the Army is committed to a course of remediation of all hazardous waste sites and certification that all lands (including buildings and facilities) are suitable for disposal and reuse as required by

the Community Environmental Response Facilitation Act of 1992 (CERFA) and the Army's Installation Restoration Program (IRP). One-year, renewable leases and licenses will be granted, where appropriate, to permit temporary use of real property at the Depot prior to disposal. These adopted pre-disposal actions (i.e., mitigation measures) will ensure that the Depot is maintained within acceptable standards and used to the benefit of the community, while being readied for transfer to future users (federal and non-federal).

In implementing property disposal, the Army must consider requests received in the screening process for transfer of federal land required under the Federal Property and Administrative Services Act of 1949, as well as the Stewart B. McKinney Homeless Assistance Act (McKinney Act). The Army will honor, where possible and appropriate, all state and local requests for conveyance. Adjustments may be necessary prior to disposal to resolve conflicts between various requests and to accommodate transfers and development for these uses in a way that is environmentally compatible or can accommodate these uses without significant adverse environmental consequences or degradation.

As previously discussed, the Army intends to transfer property in encumbered parcels. It is a decision of this ROD that excess property would be conveyed subject to the following restrictions identified in the FEIS:

- Deed reservation (easement) for utilities and roads to the Navy/Marine Reserve area.
- Deed reservation (easement) for the right to use the bridge, gate and road from the Navy/Marine Reserve area to access the Army Reserve Center.
- Probable deed reservation (easement) for access to the Army Reserve Center from the proposed north-south city road which would pass along the Army Reserve Center's east boundary.
- Deed reservation (easement) for right of access to Okinawa Street.
- Deed reservation (easement) for access to remediation areas until cleanup is completed.
- Deed restriction prohibiting disturbance of subsurface soils at depths affecting the stabilized mass in relation to the remediation of the Oxidation Lagoons and South Post Burn Pits area.
- Deed reservation (conservation easement) prohibiting disturbance of Pool 413 along Kwajalein Street

Implementing the disposal process in this manner will protect future Army interests, meet regulatory requirements, and make property available for early disposal.

The Army will seek fair market value for property where appropriate. As required by the 1990 Base Closure Act, proceeds from this process are placed in the base closure account to pay for the cost of closure, replacement facilities, and remediation of closing installations.

The 49.4-acre Reserve enclave area was transferred to the Army Reserves and ARNG in 1993. Transfer of the uneconomical remnant parcel (12 acres) to ARNG will bring the total to 61.4 acres and will facilitate additional natural resource protection. NEPA evaluations will be prepared by the Army Reserves and ARNG to cover the Federal Youth Program and any construction of new facilities.

The preferred reuse alternative (Alternative 1R: Medium Intensity Reuse) is a downsized employment center. This alternative will provide employment for an estimated 6000 people while allowing associated air emissions to be in compliance with the Clean Air Act.

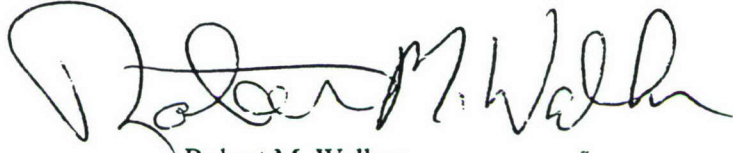
Alternative 1R was not discussed in the Draft Environmental Impact Statement (DEIS). Since it falls well within the scope of Alternative 1 and represents only a slight variation, supplementation to the DEIS was not necessary.

After the disposal of property through the federal screening process, McKinney Act conveyances, and public benefit conveyances, implementation of anticipated reuse will be directed by the City of Sacramento. The City shall be the general plan and zoning authority for future uses of the property, and may at any time change its decisions to meet the evolving goals of the community.

Implementation and enforcement of mitigation measures for Alternative 1R (see Attachment 2) will be the responsibility of non-Army entities such as the City of Sacramento and future new land owners. However, the Army will play an important role by establishing the encumbrances, or deed restrictions, on the reuse parcels prior to property transfer (see Page 4). These encumbrances will provide for long-term protection of sensitive habitats and will facilitate remediation of hazardous waste sites.

Additional mitigation for reuse that is beyond Army purview was identified in the FEIS to reduce or avoid secondary or indirect impacts. These mitigations have been augmented through discussions with, and comments from, local land use planning entities. The Army will provide these recommended mitigations to responsible federal, state, and local agencies and other recipients of the land.

The Army will continue to encourage these entities and others receiving land to adopt appropriate mechanisms for avoidance and mitigation of harmful environmental impacts as part of their decisions for their reuse actions. Appropriate measures will be used to ensure that the Army's actions are consistent with federal environmental laws and regulations, including the Clean Air Act, the Clean Water Act, the Endangered Species Act, and the National Historic Preservation Act.

A handwritten signature in black ink, appearing to read "Robert M. Walker". The signature is fluid and cursive, with a large initial "R" and "W".

Robert M. Walker
Assistant Secretary of the Army
(Installations, Logistics & Environment)

Attachments

Table A-I
Summary of Impacts by Sacramento Army Depot Reuse Alternative
for Each Issue Area

Issue Area	General Description of Impact	Reuse Alternatives					
		1	1R	2	3	4	5
Land Use	Use restriction in deed	-	-	-	-	-	-
	Conflicts between proposed and adjacent uses	-	-	-	-	-	-
Socioeconomics	Population exceeds rational threshold value (RTV)	X (beneficial)	-	-	-	-	-
	Employment exceeds RTV	X (beneficial)	-	-	-	-	-
	Expands existing school system	X	X	X	-	()	()
Soils, Geology, Topography, Seismicity, and Flooding	Increased erosion due to construction	-	-	-	-	-	-
	Decreased recharge to groundwater, increased surface runoff	-	-	-	-	-	-
	Seismic risk	-	-	-	-	-	-
	More people and property exposed to flood hazard	-	-	-	-	-	-
Public Services and Utilities	Demands exceed baseline infrastructure capacities.	X	X	X	-	()	()
Public Health and Safety	Changes in law enforcement or fire protection resources	-	-	-	-	()	()
Traffic and Circulation	Site-generated trips per day (tpd)	71,474 X	21,791 X	38,539 X	14,554 -	4,945 ()	425 ()
	Increased site trips above existing conditions (tpd)	58,976 X	9,291 X	26,039 X	2,054 -	-7,555 ()	-12,075 ()
	Increased site tpd above projected future conditions	56,176 X	6,491 X	23,241 X	-746 ()	-10,355 ()	-14,875
	Total area tpd with future conditions including site	419,236 X	392,571 ¹ X	400,360 X	376,230 -	366,842 ()	362,200 ()

Table A-I
Summary of Impacts by Sacramento Army Depot Reuse Alternative
for Each Issue Area

Issue Area	General Description of Impact	Reuse Alternatives					
		1	1R	2	3	4	5
	generated tpd						
	Off-site lanes required above projected future needs	4-6 X	0 -	2-4 X	0 -	0 -	0 -
	Increased vehicle miles traveled from existing conditions (daily)	748,995 X	117,995 -	330,695 X	26,086 -	-95,948 ()	-153,352 ()
	Increased vehicle miles traveled from future conditions (daily)	713,435 X	82,436 -	295,161 X	-9,474 ()	-131,509 ()	-188,913 ()
Air Quality	Increased air emissions	X	-	X	()	()	()
Noise	Excessive noise	-	-	-	-	()	()
Hazardous Waste	Release of hazardous material	-	-	-	-	-	-
Vegetative, Wildlife, and Wetland Resources	Decrease in existing vegetation communities, or wildlife resources.	X	X	X	-	-	()
Cultural Resources	Adverse effects on eligible or listed properties	-	-	-	-	-	-

Notes: X = Significant impact applies to this alternative. Refer to text in this section for the extent of the impact.

- = Impact not significant.

() = Indicates a decrease in impact relative to baseline.

**Record of Decision
SACRAMENTO ARMY DEPOT**

Attachment 2

**Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative**

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
Land Use	
1 Employment Center	Army to place use restriction for parcel over South Post Burn Pits.
1R Preferred Alternative	Army to place use restriction for parcel over South Post Burn Pits.
2 Heavy Commercial/Industrial	Army to place use restriction for parcel over South Post Burn Pits.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Socioeconomics	
1 Employment Center	City could either: donate land for a school site, require school impact fees for new construction, or require new development at the Depot to join the school's Mello-Roos District.
1R Preferred Alternative	City could either: donate land for a school site, require school impact fees for new construction, or require new development at the Depot to join the school's Mello-Roos District.
2 Heavy Commercial/Industrial	City could either: donate land for a school site, require school impact fees for new construction, or require new development at the Depot to join the school's Mello-Roos District.
3 Heavy Commercial	None.
4 Office/Administrative	None.

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
active	
5 Caretaker (No Action)	None.
Soils, Geology, Topography, Seismicity, and Flooding	
1 Employment Center	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
1R Preferred Alternative	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
2 Heavy Commercial/Industrial	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
3 Heavy Commercial	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
4 Office/Administrative	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
5 Caretaker (No Action)	City to require new construction to be built to UBC seismic codes and adhere to California Stormwater BMP guidebook.
Public Services and Utilities	
1 Employment Center	Users would need to secure additional permitted capacity for wastewater.
1R Preferred Alternative	Users would need to secure additional permitted capacity for wastewater.
2 Heavy Commercial/Industrial	Users would need to secure additional permitted capacity for wastewater.

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Public Health and Safety	
1 Employment Center	None.
1R Preferred Alternative	None.
2 Heavy Commercial/Industrial	None.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Traffic and Circulation	
1 Employment Center	Consult with City of Sacramento on the trip reduction ordinance. Consult with City of Sacramento and private-sector developers in implementing internal circulation element improvements. Consult with City of Sacramento on the relocation and establishment of new site driveways as recommended in K.D. Anderson. Provide right-of-way for a new north-south route through a portion of the recreation area, connecting

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
1R Preferred Alternative	Elder Creek Road to Mindanao Street as part of the new internal circulation system. Consult with City of Sacramento on implementing trip reduction ordinance. Consult with City of Sacramento and private-sector developers on implementing internal circulation element improvements. Consult with City of Sacramento on relocating and establishing new site driveways as recommended by K.D. Anderson. Assist City of Sacramento in coordinating right-of-way and roadway alignment requirements with McKinney Act and public conveyance participants.
2 Heavy Commercial/Industrial	Consult with City of Sacramento on trip reduction ordinance.
3 Heavy Commercial	Consult with City of Sacramento and private-sector developers on implementing internal circulation element improvements. Consult with City of Sacramento on relocating and establishing new site driveways as recommended in K.D. Anderson. Consult with City of Sacramento on trip reduction ordinance. Consult with City of Sacramento and private-sector developers on implementing internal circulation element improvements.
4 Office/Administrative	Consult with City of Sacramento on trip reduction ordinance.
5 Caretaker (No	Consult with City of Sacramento on trip reduction

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
Action)	ordinance.
Air Quality	
1 Employment Center	User to provide emission offsets.
1R Preferred Alternative	None.
2 Heavy Commercial/Industrial	User to provide emission offsets.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Noise	
1 Employment Center	City to limit outside construction to daytime hours.
1R Preferred Alternative	City to limit outside construction to daytime hours.
2 Heavy Commercial/Industrial	City to limit outside construction to daytime hours.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Hazardous Waste	
1 Employment Center	Army to place use restrictions on South Post Burn

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
Vegetative, Wildlife, and Wetland Resources	
1R Preferred Alternative	Pits. Army to place use restrictions on South Post Burn Pits.
2 Heavy Commercial/Industrial	Army to place use restrictions on South Post Burn Pits.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Employment Center	
1	Army and City to implement measures developed through consultation with FWS on loss of vernal pool fairy shrimp habitat and City to develop mitigation measures with CDFG for loss of burrowing owl nesting areas.
1R Preferred Alternative	City to implement measures developed through consultation with CDFG on loss of burrowing owl nesting areas. To protect vernal pool fairy shrimp, Army and city to implement measures developed through consultation with the FWS and place use restrictions on Pool 413.
2 Heavy Commercial/Industrial	Army and City to implement measures developed through consultation with FWS on loss of vernal pool fairy shrimp habitat and City to develop mitigation measures with CDFG for loss of burrowing owl nesting areas.
3 Heavy Commercial	None.

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Visual Resources	
1 Employment Center	None.
1R Preferred Alternative	None.
2 Heavy Commercial/Industrial	None.
3 Heavy Commercial	None.
4 Office/Administrative	None.
5 Caretaker (No Action)	None.
Cultural Resources	
1 Employment Center	None.
1R Preferred Alternative	None.
2 Heavy Commercial/Industrial	None.
3 Heavy Commercial	None.
4 Office/Administrative	None.

Table A-II
Mitigation for Each Issue Area by Sacramento Army Depot Reuse Alternative

Alternative	Mitigation
5 Caretaker (No Action)	None.

Restoration Advisory Board

FACT SHEET



Number 6

ories are located at the California State University, Sacramento Library, Science & Technical Reference Dept., 2000 Jed Smith Drive, Sacramento, CA (916) 278-6373 and the Sacramento Army Depot's Visitor Center, 8350 Fruitridge Road, Sacramento, CA. The George Sim Community Center contains current documents only. Hours vary at each location, please call for a current listing of business hours.

City/Zip: _____

Sacramento Army Depot Mailing List
c/o Randi Grinsell
Kleinfelder, Inc.
3077 Fite Circle
Sacramento, CA 95827-9795

Roxanne Yonn, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

If you have any questions or concerns
regarding this fact sheet or any of the
environmental activities at the Sacramento
Army Depot, please submit comments in
writing to one of the following offices:

Roxanne Yonn, Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
(916) 388-2324

Barbara Marcotte, Calif. Environmental
Protection Agency
Department of Toxic Substances Control
10151 Croydon Way #3
Sacramento, CA 95827
(916) 255-3747

Marlon Mezquita, U.S. Environmental
Protection Agency
Superfund, Federal Facilities
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2393



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Sacramento Army Depot

Sacramento Army Depot-History

World War II brought many changes to Sacramento, the most visible of which was the establishment of the Sacramento Signal Depot, now called the Sacramento Army Depot.

In 1942, the Sacramento Army Depot was first located at the Old California State Fairgrounds at Stockton Boulevard and Broadway. The depot was established to temporarily relieve the congestion at the Port of San Francisco. Its mission was to consolidate, pack and ship war supplies to Army bases throughout the West Coast and Pacific Theater. By spring 1942, the Army began dismantling this temporary depot, moving most of the sections to Tracy, California, and leaving only the section that handled communications [signal] equipment and supplies. The depot was then relocated to an area near Richards Boulevard for the remainder of World War II.

On April 19, 1945 authorization for the construction of a permanent depot was received. Several sites were explored and on July 5, 1945, ground breaking ceremonies were held at the depot's current location. The depot is in an industrial area within the corporate limits of the city of Sacramento, approximately 7 miles south of downtown Sacramento. The depot covers approximately 485 acres of land bounded on the north by Fruitridge Road, on the east by Florin Perkins Road, on the south by Elder Creek Road, and on the west by Southern Pacific right-of-way near Power Inn Road.

Current operations at the depot include repair of electronic components and communication shelters. This includes welding, machining, and metal plating. The work force consists of approximately 3,300 civilians and 20 military employees. The depot also provides support for several tenant organizations: the Television Audio Support Activity, the U.S. Army Reserve Center, Army Information Systems Command Activity, Defense Distribution Region West, U.S. Army Health Clinic, 1118th Signal Battalion, the Navy Broadcast Detachment, and the U.S. Army Western Area Calibration and Repair Center.

The Base Realignment and Closure Commission [BRAC-91] recommended the depot for closure. This recommendation was upheld by Congress. The depot is scheduled for closure by 1997.

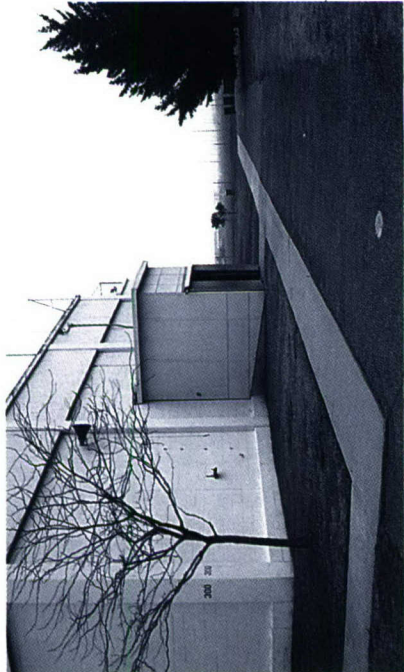
The Problem

Past activities at Sacramento Army Depot have included operations associated with industrial activities, former disposal areas, underground storage tanks, and storage/handling areas.

Wastes from these former operations were disposed of by means such as burning, burying, open area settling and evaporation. Waste oils and solvents were burned and buried at two "burning pits" and wastewater containing heavy metals from industrial operations were discharged to holding ponds and the metals allowed to settle out prior to discharging the wastewater. Solvents from these operations were also disposed of in underground storage tanks.

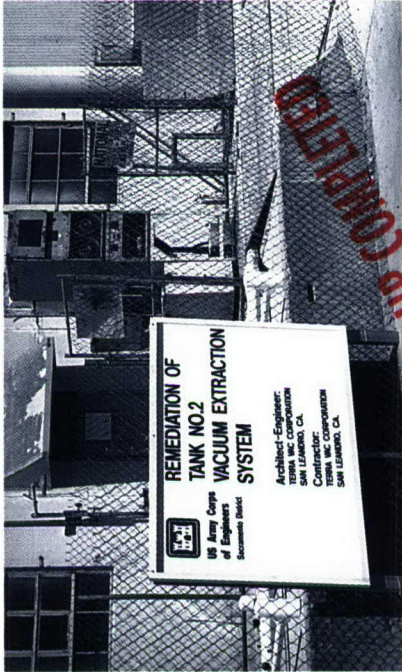
Extensive environmental studies have been conducted at Sacramento Army Depot since 1980. Several areas with known soil and/or groundwater contamination resulting from the past operations at the depot were identified.

The U.S. Army is dedicated towards the restoration and cleanup of the Sacramento Army Depot.



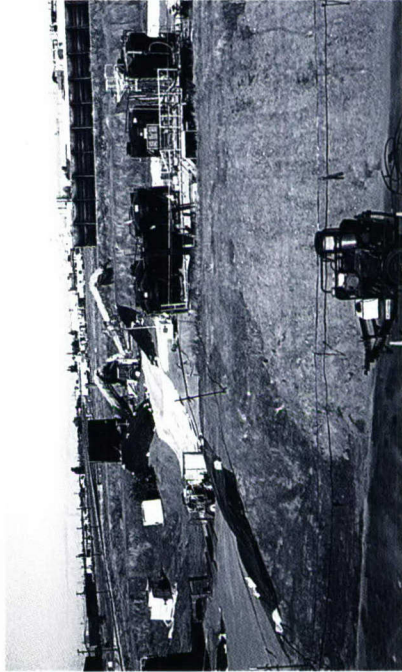
Building 300 Old Burn Pits

The two Old Burn Pits operated from 1945 until the mid 1950's. Plating shop wastes, heavy metals, paint sludges, nigrosine dye, radium dial paint, batteries, oil, grease, sanitary refuse and other industrial waste were reported to have been burned and/or buried in the Old Burn Pits. By the late 1950's the Old Burn Pits were closed and the material from the site moved to the present Burn Pits. After the pits were closed, the Metrology Building [Building 300] was built at the site.



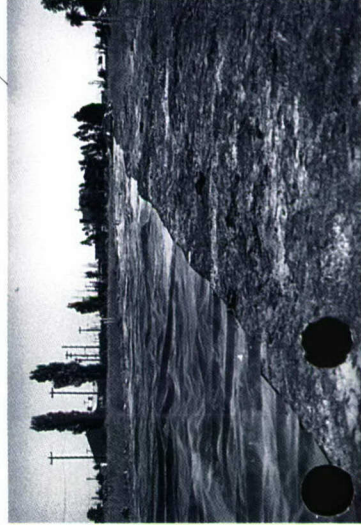
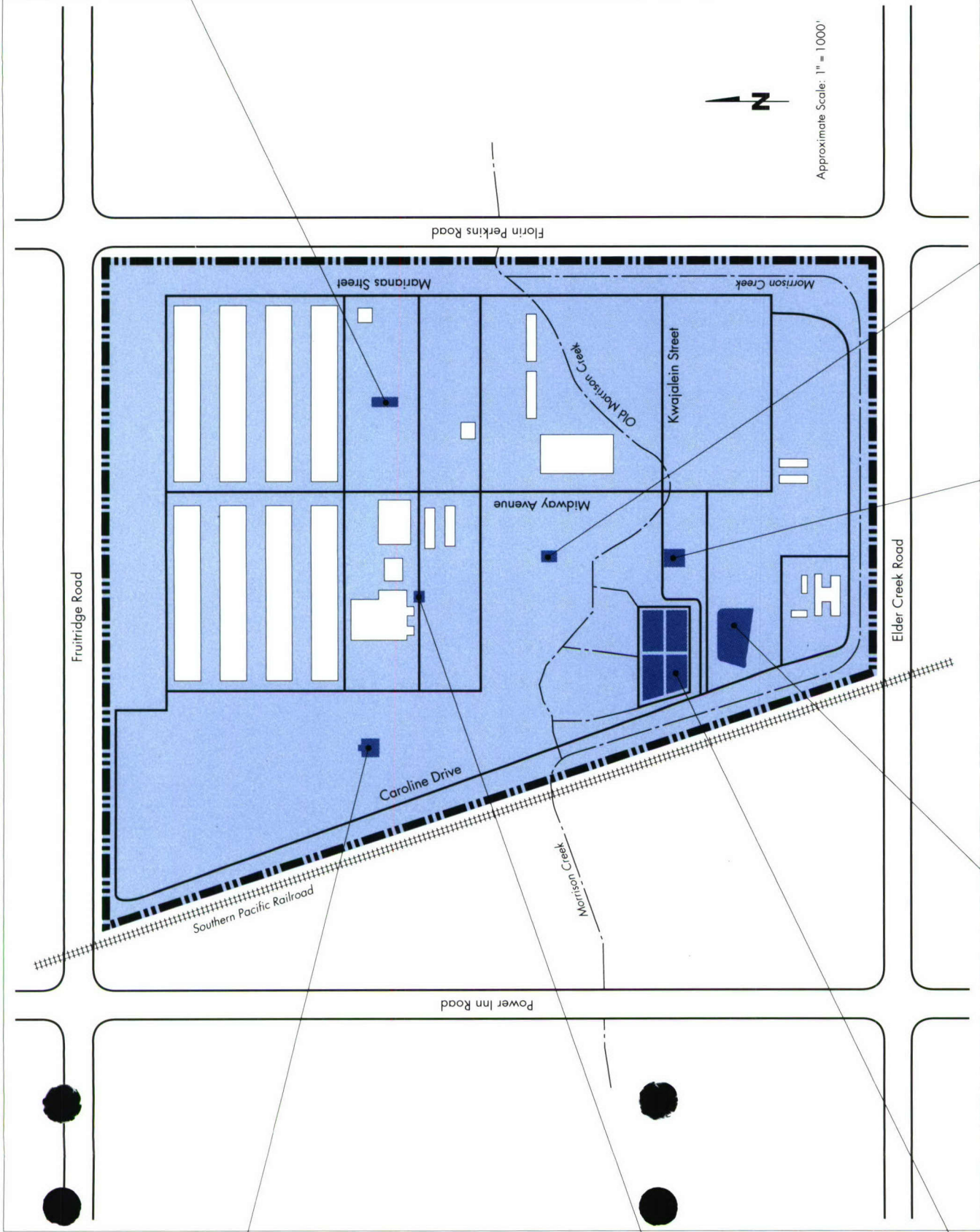
Tank 2

Tank 2, located south of Building 300, was a 1,000-gallon underground storage tank used for storing waste solvents. The tank was emptied and abandoned in 1980. In 1986, the tank, which showed signs of significant deterioration, was removed. The former tank site was backfilled and is now under a concrete slab. Cleanup has begun at this site.



Oxidation Lagoons

The four Oxidation Lagoons, the Drainage Ditches, and Old Morrison Creek are located directly north of the Burn Pits, in the southwest quadrant of the depot. Over a period of 22 years, the Oxidation Lagoons received wastewaters from most of the depot wastewater generating operations. As the lagoons became full, wastewaters would drain into Old Morrison Creek via the drainage ditches. Old Morrison Creek is the name given to the portion of Morrison Creek that originally flowed through the current depot site prior to depot construction. Currently, the four lagoons, drainage ditches and Old Morrison Creek are dry and not in use.



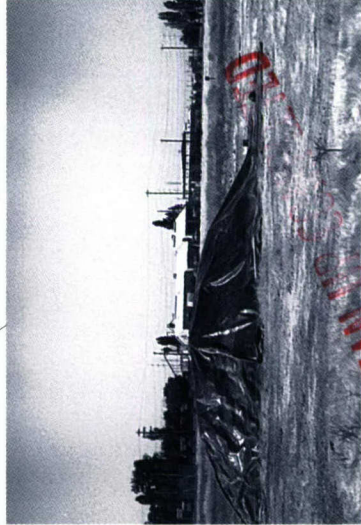
Burn Pits

The Burn Pits are located in the southwest section of the depot. Constructed in the late 1950's, the Burn Pits were used intermittently for the incineration and burial of plating shop wastes, paint sludges, oil and grease and batteries.



Onsite Groundwater

Onsite groundwater below the depot is contaminated with volatile organic compounds, commonly referred to as VOCs. The groundwater treatment plant began operation in 1989. It treats approximately 500,000 gallons per day.



Battery Disposal Well

Located west of Building 555, the Battery Disposal Well was used for disposal of dry cell batteries during 1946 and 1947.



Pesticide Mix Area

Prior to 1982, pesticides were used in Building 352. Pesticide containers were rinsed in a sink on the exterior wall of Building 356 which drained through a pipe and onto the ground near the sidewalk which runs between Attnu and Mindanao streets.

The Cleanup Process

In July of 1984, the Sacramento Army Depot was first identified by the U.S. Environmental Protection Agency [U.S. EPA] as a potential federal Superfund site on the basis of its groundwater and soil contamination. The site was placed on the National Priorities List [NPL] effective August 21, 1987. The NPL serves as an information and management tool for identifying facilities and sites which warrant further investigation to determine if they pose a threat to human health or the environment.

In December of 1988, the U.S. Army, along with the U.S. EPA, and California EPA Department of Toxic Substances Control Division, signed the Federal Facilities Agreement [FFA] under Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]. This agreement was one of the first to be signed in the western United States. The purpose of this agreement is to outline a plan to effectively manage the cleanup at the depot. Under this agreement, the Army is responsible for guiding the Superfund cleanup process at the depot in conjunction with federal and state regulatory and advisory agencies.

Several investigations have been performed at the Sacramento Army Depot to assess conditions at potentially contaminated sites. These investigations have consisted of both record searches and field investigations dating back to 1979.

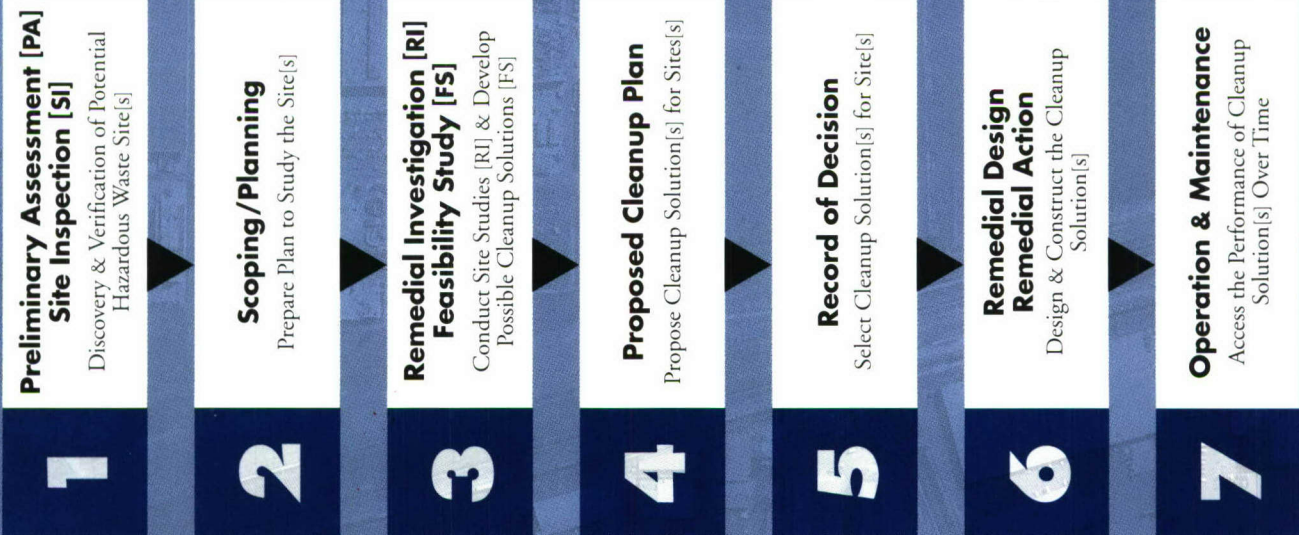
A Remedial Investigation [RI] has been performed on seven of the eight units. Each RI involved extensive collection and laboratory analysis of soil and water samples to assess the type, degree, and extent of contamination. After a RI has been conducted, the analytical results are then used to evaluate cleanup options. Once the cleanup plan has been developed, it is then reviewed by the public and regulatory agencies, finalized and implemented.

The Army's Environmental Pledge

The Sacramento Army Depot has and will continue to take great strides in assuming our responsibility to the environment and the community. Though the depot has been slated for closure, our commitment to restoring the environment will not end with the depot's closure. It will continue until the community, the regulatory agencies, and the U.S. Army are satisfied that we have completed our mission to be responsible to both the environment and the community.

Until that time, the Sacramento Army Depot will continue to implement cost effective and innovative solutions to correct past environmental practices and to make sure that future environmental contamination is prevented at the depot.

Army Installation Restoration Program Process



The Community Relations Program

Members of the nearby community play an integral part in the environmental restoration program at the Sacramento Army Depot. To keep the community informed and involved in the environmental cleanup activities, the Army has developed a Community Relations Plan with input from state and federal regulatory agencies, local elected officials, and community members. The goal of the Community Relations Plan is to inform the community about the environmental cleanup and allow the community to voice its concerns. To achieve this goal, the depot encourages two-way communication through participation in community meetings, fact sheets and newsletters.

Information Repositories

The Information Repositories contain many useful documents describing the environmental work being performed at the Sacramento Army Depot. As documents are completed during the cleanup process, they will be made available for public review at the information repositories. Three repositories have been established and are available for public review at the following locations:

- Sacramento Army Depot
Visitor Control Building
8350 Fruitridge Road
Sacramento, CA 95813
9:00 am-3:00 pm, Monday-Friday
- California State University, Sacramento
Library-Science & Technical Reference Dept.
2000 Jed Smith Drive
Sacramento, CA 95819-2695
7:45 am-6:30 pm, Monday-Friday
- George Sim Community Center
6207 Logan Street
Sacramento, CA 94813
8:00 am-8:30 pm, Monday-Friday

Mailing List Information

The Sacramento Army Depot encourages the exchange of information with interested citizens. If you would like more information, have questions or comments, or would like to be added to our mailing list, please write to one of the following offices:

- Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012
[916] 388-2324
- IRP Program Manager
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5052
[916] 388-4344

A Commitment to Restore the Land and the Environment



Sacramento Army Depot

Proposed Plan for Basewide Cleanup



SACRAMENTO ARMY DEPOT PROPOSED PLAN - BASEWIDE CLEANUP

U.S. Army, Sacramento Army Depot - Sacramento, California

November/December 1994

Sacramento Army Depot Activity (SADA) Announces Plan to Address Soil and Groundwater Basewide

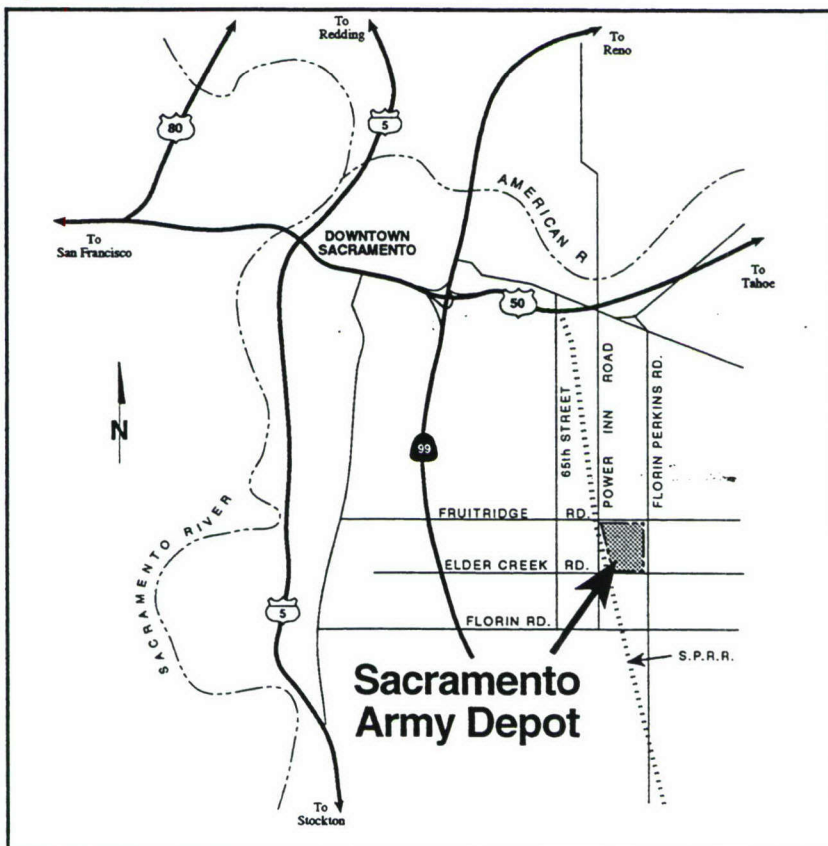
The U.S. Army (Sacramento Army Depot Activity) is requesting public comments on the Proposed Plan which presents: 1) the preferred remedial alternative for basewide cleanup of soil and groundwater areas at the Sacramento Army Depot, and 2) amendments to two previous Records of Decision (RODs) which addressed operable unit (OU) cleanups at SADA. The entire SADA site was placed on the National Priorities List (NPL) in August 1987. Subsequently, in December 1988 the Army, U.S. EPA, and the State of California entered into a Federal Facility Agreement to investigate the site and take appropriate remedial action to protect human health and the environment. Under this agreement, the Army is the lead agency for conducting investigations, reporting, and implementing remedial actions at SADA.

The Proposed Plan meets the reporting requirements of Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as Superfund. The Proposed Plan for

the basewide cleanup is preliminary, and the Army encourages you to comment on all of the alternatives described in this fact sheet and in the Feasibility Study, which is available in the Administrative Record (see page 15 for locations). Public comments will be addressed during a public meeting on December 7, 1994 and after the public review and comment period ends on December 21, 1994. Responses to these comments will be

included in a Responsiveness Summary attached to the Basewide Record of Decision (ROD). The Basewide ROD will be the final decision document for the entire site. It will present final cleanup remedies for remaining areas of contamination and incorporate all areas investigated at SADA, including those areas previously addressed as Operable Unit RODs, as well as areas for which no action/no further action is required.

Figure 1: Area Map



The Army intends to clean up all those areas at the depot that pose a threat to human health and the environment such that the property can be reused by the community when the base is closed. The Army's preferred remedial action includes: 1) extraction and treatment of the South Post groundwater plume, 2) extraction of the Parking Lot 3 groundwater plume and discharge to the Sacramento regional water treatment system, 3) excavation of contaminated soil at the Building 300 Burn Pits, transfer and stabilization of the soil in the Corrective Action Management Unit (CAMU) designated at the South Post Burn Pits, 4) transfer of contaminated soil at the Battery Disposal Well (this soil has already been excavated and stored in containment bins) and stabilization of the soil in the CAMU designated at the South Post Burn Pits, and 5) no action at areas where no remedial action is required to ensure protection of human health and the environment.

Additionally, as noted above, two previous OU RODs will be amended. The Oxidation Lagoons ROD will be amended to change the previously selected remedy from soil washing to transfer of the contaminated soil for stabilization at the CAMU designated at the South Post Burn Pits. The South Post Burn Pits ROD will be amended to designate the area as a CAMU, thus allowing it to accept contaminated soil from Building 300, the Battery Disposal Well and the Oxidation Lagoons. The soil gas cleanup levels relating to the South Post Burn Pits soil vapor extraction system currently in place will be changed. After the revised cleanup level is achieved, stabilization at the South Post Burn pits will take place.

The U.S. Environmental Protection Agency (EPA) and the California En-

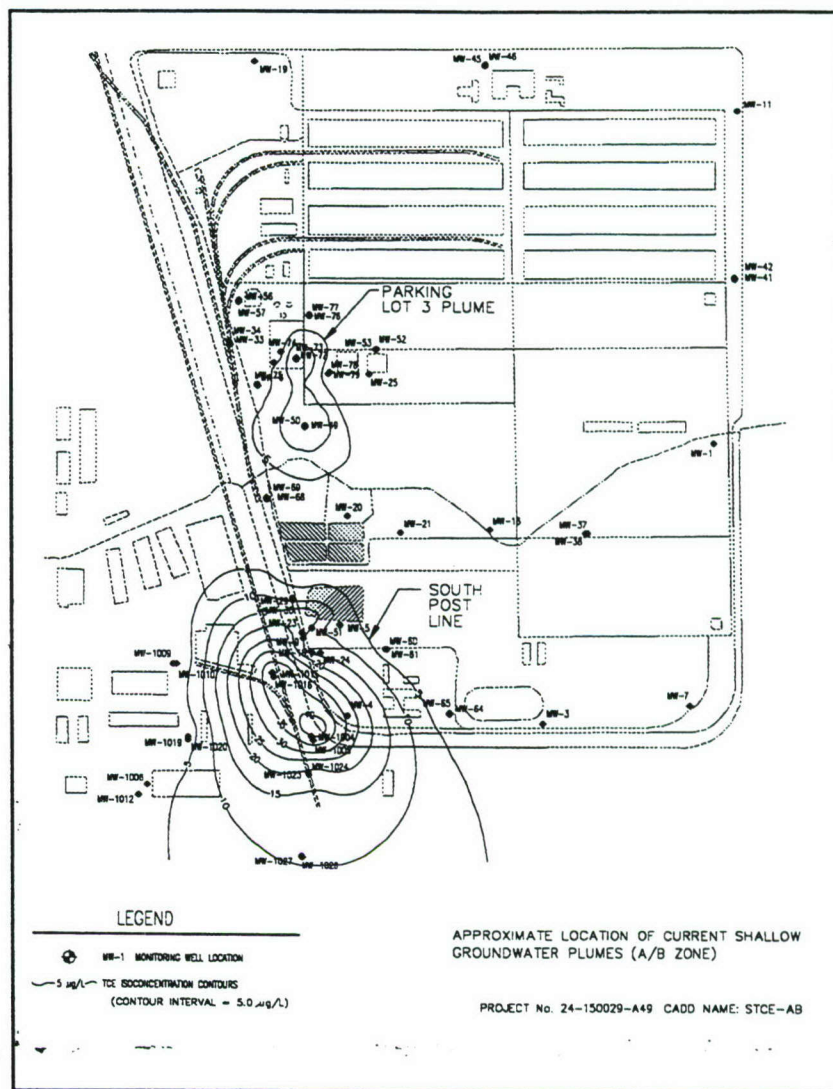


Figure 2: Areas of Groundwater Impacted by VOCs

vironmental Protection Agency's (Cal-EPA) Department of Toxic Substances Control (DTSC) and the Central Valley Regional Water Quality Control Board (RWQCB) have participated in the evaluation of the proposed cleanup plan. Detailed descriptions of the areas of contamination, including explanations regarding the extent of contamination and potential health risks to the community due to site contaminants currently found at the depot are contained in the Basewide Feasibility Study report. This document is avail-

able for review, along with other site-related documents, in the information repositories listed on page 15 of this fact sheet.

Site Background

The Sacramento Army Depot Activity (SADA) is located at 8350 Fruitridge Road in Sacramento, California, approximately 7 miles southeast of the city's central business district (see Figure 1, page 1 of this fact sheet). SADA was established at its present location in 1945 to receive,

store, issue, and maintain electronics supplies and commodities. Operations at SADA involved the use of hazardous substances, including organic solvents, oils and grease, fuels, lubricants, caustic solutions, and metal-plating baths. Although past disposal practices were considered proper at the time, some of these wastes or by-products have been found in both soil and groundwater at SADA.

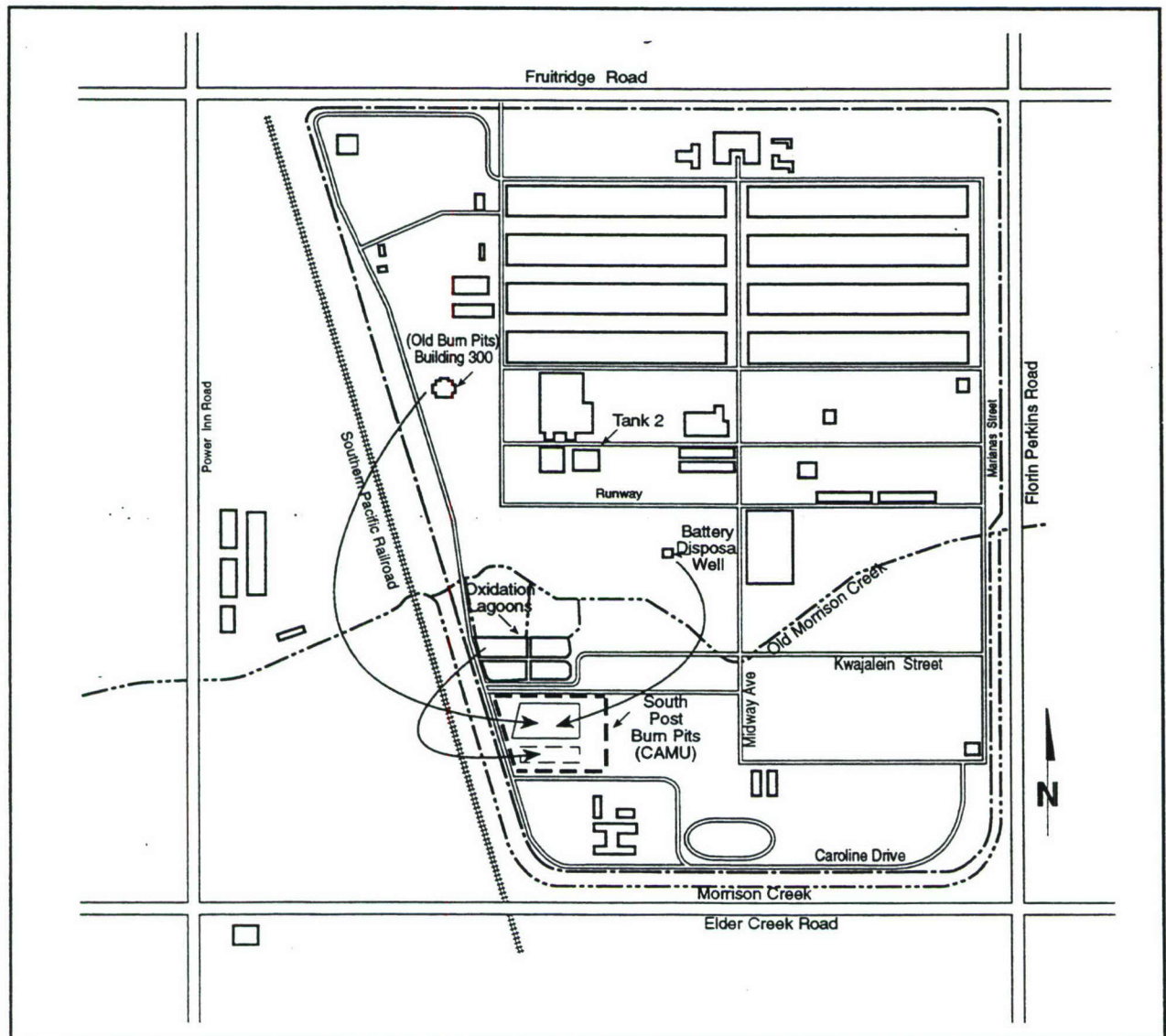
SADA is an Army military base that will be closed as mandated by the Base Realignment and Closure Act of 1990. The City of Sacramento has developed a reuse option for the property, which is zoned for industrial use. Under CERCLA 120 (h) (3), before property requiring cleanup can be transferred to the City, construction and installation of the approved remedial design must be completed by the Army and the remedy must be demonstrated to EPA to be operating

properly and successfully.

Scope and Role of the Response Action

The Army's strategy for remediating the site has been to accelerate the investigation of potential areas of contamination and remediate areas to protect human health and the environment. In order to meet these goals, the Army prioritized areas of

Figure 3: Proposed CAMU for Stabilization



the depot for investigation based on historical information indicating a potential for contamination. Eight areas initially were given first priority for investigation because they were believed to have the greatest potential for releases to the environment. Four of these areas (South Post groundwater plume, Tank 2, Oxidation Lagoons, and South Post Burn Pits) were investigated as operable units and addressed by OU RODs, as discussed below.

Thirteen areas were evaluated as potential Solid Waste Management Units (SWMUs) and the Army conducted a Facility Assessment of each area under the Resource Conservation and Recovery Act (RCRA). Twenty-nine areas were not identified as potential SWMUs, and were given the lowest priority for investigation.

In addition, three other areas of potential concern, Parking Lot 3, Freon 113 Area, and Contractor's Spoils Area, were evaluated during the remedial investigations and are addressed in the basewide feasibility study.

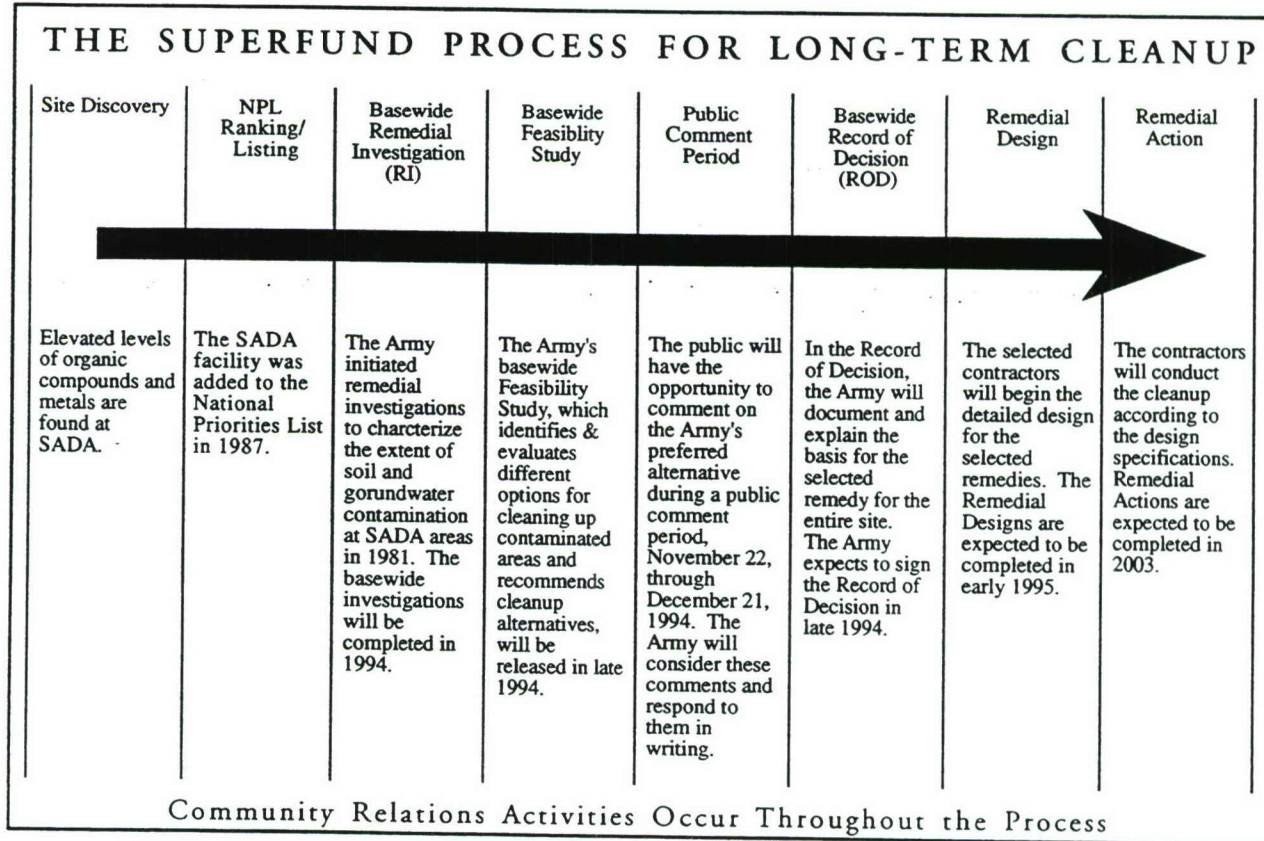
Table 1, see Appendix A, gives a summary of the sites investigated by the Army, an indication of the type of investigations conducted, whether contamination was found, the potential threat to human health and the environment, and the cleanup status. The Army is recommending remedial action or no action/no further action for these areas based on their potential threat to human health and the environment.

Groundwater samples have been collected at SADA since 1981. Over the

years, sampling has indicated that volatile organic chemicals (VOCs), including trichloroethene, tetrachloroethene, 1,2-dichloroethane, cis/trans 1,2-dichloroethene, and carbon tetrachloride are present in groundwater at levels above the drinking water standards. The two areas of groundwater impacted by VOC contamination are the Parking Lot 3 plume and the South Post plume. These areas are shown on Figure 2, located on page 2 of this fact sheet.

The first ROD, an interim ROD for on-base groundwater, was signed in 1989. This ROD addressed the containment and cleanup of groundwater in the southwest corner of the depot. (At the time this ROD was signed, groundwater contamination at Parking Lot 3 had not yet been dis-

Figure 4: Superfund Long-term Cleanup Process



**SUMMARY OF POTENTIAL HEALTH RISK POSED
BY CHEMICALS IN GROUNDWATER
UNDER CURRENT CONDITIONS***

Site	Receptors	Chemicals of Concern	Exposure Pathways	Estimated Cancer Risk	Estimated Non-Cancer Risk
South Post Groundwater	Future on-site Resident	trichloroethene tetrachloroethene	Ingestion and inhalation	3 in 100,000	Less than 1.0
	Future on-site Worker			2 in 100,000	Less than 1.0
Freon 113 Area Groundwater	Future on-site Resident	carbon tetrachloride Freon 113** chloroform trichloroethene	Ingestion and inhalation	5 in 100,000	Less than 1.0
	Future on-site Worker			3 in 100,000	Less than 1.0
Parking Lot 3 Groundwater	Future on-site Resident	trichloroethene chloroform 1,2-dichloroethane carbon tetrachloride tetrachloroethene	Ingestion and inhalation	1 in 10,000	Less than 1.0
	Future on-site Worker			6 in 100,000	Less than 1.0

* Based on the A-zone (shallow) monitoring well with highest concentrations.

** Freon is detected at highest concentrations, but is not a health concern.

Table 2: Potential Health Risk Posed by chemicals in Groundwater

covered.) The South Post Burn Pits (described below) are the source of groundwater contamination in this area and are currently under remediation. The groundwater in this area is being extracted, treated with UV light/chemical oxidation in an on-base treatment plant, and discharged to the Sacramento Regional Wastewater Treatment System. The remedy selected in the interim ROD is being reevaluated and will be finalized as part of the basewide ROD. The Army will update its groundwater reuse plan to evaluate potential reuses for treated groundwater (i.e., industrial off-site use, industrial on-site use, irrigation, reinjection, etc.).

The second ROD, addressing cleanup of contaminated soil at Tank 2, was signed in December 1991. This site was remediated using soil ventilation

to clean the soil in place without excavation. The remedy has been completed, cleanup goals have been met and approved by the agencies, and this site requires no further action.

The third ROD, which addressed cleanup of contaminated soil at the Oxidation Lagoons area, was signed in September 1992. The remedy selected to clean up the soil was excavation of contaminated soil, followed by on-site soil washing to remove the metals of concern, and placement of clean, washed soil back into the excavation. A large scale pilot test for soil washing was completed at the Oxidation Lagoons in 1993. The pilot test indicated that soil washing may not offer the best solution for protection of human health and the environment at a reasonable cost. In addition, regulatory changes by the

State of California allowing the establishment of Corrective Action Management Units (CAMUs) were promulgated in 1994. A CAMU is a designated area at a site to which wastes are brought for the purpose of implementing treatment, containment, or disposal. Designation of a CAMU allows contaminated soil at the Oxidation Lagoons to be transferred and consolidated for stabilization at the South Post Burn Pits area. This alternative is more technically and economically effective than soil washing.

At this time, the Army is proposing to amend the Oxidation Lagoons ROD by changing the remedy for cleanup of the Oxidation Lagoons from soil washing to soil stabilization. The CAMU regulatory changes will allow the soil to be moved and

placed into a CAMU at the South Post Burn Pits without triggering the minimum technology requirements for a hazardous waste landfill. The cleanup levels agreed to in the Oxidation Lagoons ROD will not change and can be achieved by stabilization.

The fourth ROD, addressing cleanup of contaminated soil at the South Post Burn Pits, was signed in 1993. The remedy selected was in-situ soil ventilation to remove volatile organic contaminants, plus excavation of the pits followed by stabilization of the excavated soil to treat non-volatile contaminants, and backfill of the pits with stabilized soil.

At this time, the Army is proposing to amend the South Post Burn Pits

ROD by expanding the scope of the stabilization to allow soil with similar contaminants from the Oxidation Lagoons, the Battery Disposal Well, and the Building 300 Burn Pits to be brought to the South Post Burn Pits area for stabilization (see Figure 3, page 3 of this fact sheet). This will be accomplished by establishing a CAMU at the South Post Burn Pits. Creation of a CAMU at the South Post Burn Pits will increase the reliability, protectiveness and effectiveness of cleanup basewide and reduce its cost. Utilizing the same technology for multiple areas of contamination allows the Army to minimize the potential for releases, protects human health and the environment, and is cost effective. The Army is also proposing to change the soil gas cleanup

level to a concentration that is technically feasible. The revised cleanup level will provide soil remediation, protect groundwater quality and be protective of human health and the environment.

The Army and the regulatory agencies expect to sign the Basewide Record of Decision for the entire site in January 1994. The ROD will document and explain: 1) the basewide groundwater cleanup plan, 2) the basewide soil cleanup plan, 3) the amendments to the South Post Burn Pits and Oxidation Lagoons RODs, 4) the areas where no action/no further action will be taken, and 5) the Army's response to public comments on the preferred remedies. The selected remedy is expected to meet

Table 3: Potential Health Risks Posed by Site Chemicals in Soil

Summary of Potential Health Risks Posed by Site Chemicals in Soil Under Current Conditions

Site	Receptors	Chemicals of Potential Concern	Exposure Pathways	Estimated Cancer Risk	Estimated Non-Cancer Risk
Oxidation Lagoons	Future on-site resident	Arsenic, cadmium, lead, copper, chromium, mercury, nickel, silver, zinc	ingestion of soil, dermal absorption	3 in 100,000	1.0
	Future on-site worker			1 in 100,000	Less than 1.0
South Post Burn Pits	Future on-site resident	Antimony, arsenic, chromium, cadmium, lead, PCBs, cis-1,2-dichloroethylene, tetrachloroethylene, trichloroethylene	ingestion of soil, dermal absorption	1 in 10,000	2.0
	Future on-site worker			6 in 100,000	Less than 1.0
Battery Disposal Well	Future on-site resident	Cadmium, lead	ingestion of soil, dermal absorption	Not Calculated*	Less than 1.0
	Future on-site worker			Not Calculated*	Less than 1.0
Building 300, Burn Pits	Future on-site resident	Arsenic, cadmium, lead, PCBs	ingestion of soil, dermal absorption	4 in 100,000	Less than 1.0
	Future on-site worker			2 in 100,000	Less than 1.0

* Chemicals of concern at this site are not regulated as carcinogens.

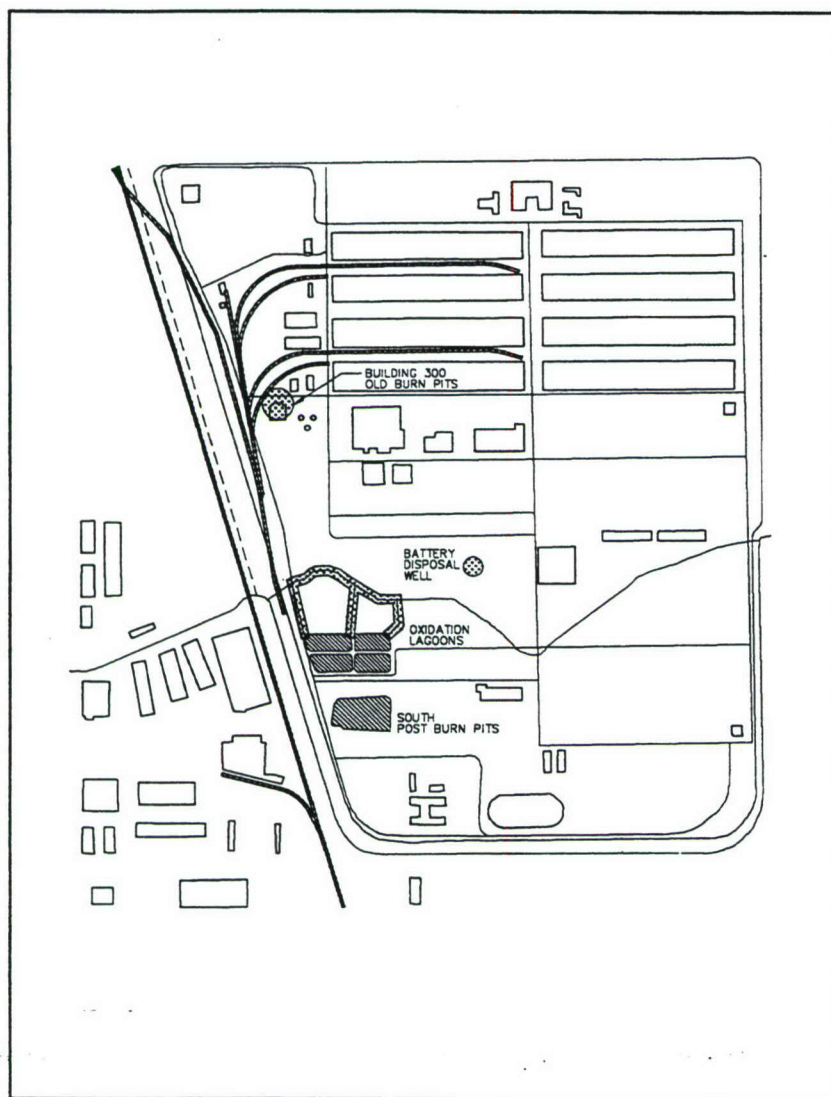


Figure 5: Approximate Locations of Contaminated Soil to be Cleaned up.

the established cleanup goals and satisfy the regulatory agencies and the community.

The U.S. EPA and the Cal-EPA will continue to oversee work by the Army until the entire site is cleaned up, the property is transferred, and the site is deleted from the National Priorities List. If the selected technologies do not fully reduce contaminant levels to the cleanup goals, and if different technologies are necessary, the Army will notify the public of the proposed changes. The Superfund

process is illustrated in Figure 4, page 4 of this fact sheet.

Summary of Site Risks

Because contaminants of concern have been found in both soil and groundwater at a number of areas at SADA, human health and ecological risk assessments were conducted for the entire facility to assess the current and future risks to public health and the environment posed by each area and by the site as a whole. The

risk assessments were used to determine which of the chemicals found could cause potential adverse effects on human health and the environment if the sites are not cleaned up. Both cancer and non-cancer risks to the public were estimated in the human health risk assessment.

Table 1, Appendix A, lists the all areas of potential concern evaluated by the Army during the remedial investigations at SADA. It includes a summary of the contaminants found in each area, if any, and the Army's proposed action, based on potential impact to human health and the environment. The areas addressed by Operable Unit RODs shown in Table 1 are those areas given highest priority for investigation because the Army believed they had the greatest potential for releases to the environment. Other areas of lesser concern were those that may have functioned as solid waste management units, or areas for which there was no historical data or other evidence indicating a potential for contamination.

In addition to the areas investigated during the remedial investigation, the Army conducted an Environmental Baseline Survey (EBS) to provide documentation that all facilities (i.e., buildings) and land areas at SADA proposed for transfer or disposal do not contain hazardous substances at levels that would pose a threat to human health or the environment. The EBS included a detailed examination of government documents, searches of records and permits from regulatory agencies, interviews with former employees, and visual inspections of each area. For the EBS investigation, the depot was divided into 109 study areas. The results of the EBS investigations are summarized in the Basewide Feasibility Study. If any EBS site requires cleanup, it will be decontaminated prior to property trans

TABLE 4
SURVIVING SUB-ALTERNATIVES FOR DETAILED ASSESSMENT

AREA OF CONTAMINATION	SUB-ALTERNATIVE NO. 1	SUB-ALTERNATIVE NO. 2	SUB-ALTERNATIVE NO. 3	SUB-ALTERNATIVE NO. 4	SUB-ALTERNATIVE NO. 5
South Post Groundwater	No further Action (Continue pumping at current flowrate using existing groundwater extraction system)	Extraction at an Increased Flowrate Using Existing Extraction System; (Increase Flow Rate to a Maximum of 450 Gallons Per Minute)	Extraction Using Existing Extraction System; Add Zone A/B Extraction Wells	Extraction Using Existing Extraction System; Add 3 Zone A/B Extraction Wells; Zone C Extraction Well	Extraction Using Existing Extraction System; Add 6 Off-site Extraction Wells; Air Sparge & Soil Vent; Zone C Extraction Well
Parking Lot 3 Groundwater	No Further Action	Pump From Two Extraction Wells/Treat Groundwater Using South Post Groundwater Treatment Plant	Pump from Two Extraction Wells/Discharge through carbon filter to sewer	-----	-----
Building 300 Burn Pits Soil	No Action	Capping	Excavate/Stabilize/On-site Disposal (in-place)	Excavate/Stabilize/Onsite Disposal (CAMU)	-----
Battery Disposal Well Investigation - Derived Waste Soil (IDW)	Offsite Disposal	Consolidate/Stabilize/Onsite Disposal in Corrective Action Management Unit	-----	-----	-----
All Other Sites*	No Action or No Further Action	-----	-----	-----	-----

NOTE

* All other sites include areas addressed as Operable Unit RODs and no action/no further action sites (see Table 1 for list).

In addition to the above sub-alternatives, two previous OU RODs will be amended. The Oxidation Lagoons ROD will be amended to change the previously selected remedy from soil washing to soil stabilization in the South Post Burn Pits CAMU. The South Post Burn Pits ROD will be amended to designate the area as a CAMU and to change the soil gas cleanup levels for the soil vapor extraction system currently in place.

Table 4: Surviving Sub-Alternatives for Detailed Assessment

fer. To date, any contamination found in the building at SADA has been or is being cleaned up. No contamination, other than that already addressed under the CERCLA investigation, has been found outside the buildings.

Table 2, which appears on page 5 of this fact sheet, summarizes the potential health risks to a future on-site resident and a future on-site worker exposed to contaminants in groundwater under current site conditions. **These risks are the worst-case scenario.** They were calculated using data from the A-zone wells having the highest concentration of volatile organic compounds. The A-zone is the shallowest of the four groundwater aquifers at the site. The A-zone wells are impacted first as contaminants move through the soil into the groundwater.

Table 3, located on page 6 of this fact sheet, gives a summary of the potential health risks posed by site contaminants in soil under current conditions. The table includes those areas with significant soil contamination for which a detailed risk assessment was conducted. The results of this risk assessment were used to develop remedial action objectives for each area so that public health will be protected. Figure 5 (see page 7) shows the approximate locations of the areas where soil contamination will be cleaned up.

Several areas investigated, which had low levels of soil contamination, were evaluated using a screening risk assessment procedure rather than a detailed assessment. These sites included: Two Trenches, Acid Sump, Paint Residue and Waste Oil Dump, Cyanide Leach

Field, and Fill Area. **The screening risk assessment procedure uses the most conservative assumptions to develop acceptable health-based concentrations.** Then, the maximum concentrations found in each area are compared to the health-based concentrations to evaluate potential health risk and to determine whether a detailed risk estimate should be conducted. The maximum concentration of contaminants did not exceed screening health-based levels at any of the areas.

As noted in Table 1, most of the areas evaluated at SADA had no detected contamination. Therefore, no risk assessment and no remedial action was required for these areas.

A detailed risk assessment was not conducted for the Pesticide Mix Area

Figure 6

How a Remedy is Selected & Implemented

EVALUATION CRITERIA

The Army, in conjunction with involved regulatory agencies and the public, will select a basewide cleanup alternative for SADA based on nine criteria used to evaluate the alternatives. The evaluation criteria have been developed to address legal requirements, as well as technical and policy considerations that have proven to be important for selecting cleanup alternatives. Each alternative is assessed against

the nine evaluation criteria described below. The results of this assessment are used to compare the alternatives and identify the key tradeoffs among the alternatives. This approach is designed to provide decision makers with sufficient information to adequately compare the alternatives, select an appropriate remedy for a site and satisfy legal requirements. The nine criteria are summarized in the text below.

THE NINE CRITERIA

THRESHOLD FACTORS: **Overall Protection of Human Health and the Environment**

1. Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

2. Site remediation should comply with federal and State laws that apply to project. Addresses whether or not a remedy will meet all ARARs of federal and state environmental statutes or provides grounds for invoking a waiver.

PRIMARY BALANCING FACTORS:

Short Term Effectiveness

3. Addresses the period of time needed to complete the remedy, and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until the cleanup goals are achieved.

Long Term Effectiveness & Performance

4. Refers to the ability of remedy to maintain reliable protection of human health and the environment over time,

once cleanup goals have been met.

Reduction of Toxicity, Mobility & Volume Through Treatment (TMV)

5. Refers to the anticipated ability of a remedy to reduce the toxicity, mobility and volume of the hazardous components present at the site.

Implementability

6. Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

Cost

7. Evaluates the estimated capital, operation and maintenance costs of each alternative.

MODIFYING FACTORS:

State Acceptance

8. Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

Community Acceptance

9. Indicates whether community concerns are addressed by the remedy and whether the community has a preference for a remedy. Public comment is an important part of the final decision.

because contaminated soil was removed from the area during the site investigation, while characterizing the nature and extent of contamination. Therefore, under current conditions it poses no risk to human health or the environment. Soil contamination remaining at Parking Lot 3 and the Freon Spill Area after the pilot testing also poses no threat to human health or the environment, and no further action will be taken. Short-term monitoring may be conducted as needed to confirm that no additional cleanup is necessary.

Summary of Remedial Action Objectives

Soil and groundwater contamination areas at SADA that present a threat to human health and the environment will be remediated so that public health is protected. The remedies will comply with Federal and state applicable, or relevant and appropriate requirements (ARARs). Further discussion on ARARs is included in the feasibility study and compliance will be addressed in the ROD. The goal of the Army and regulatory agencies is to reduce the excess cancer risk to at or below one in 1,000,000 people upon completion of remediation. For non-cancer health effects, the EPA and the Army consider a Hazard Index (HI) of greater than 1.0 to represent an unacceptable health risk, and their goal is to reduce the HI to 1.0 or less.

Evaluation of Cleanup Alternatives

To achieve the remedial action objectives described above, the Army assembled technologies for each area and developed potential remediation alternatives, termed sub-alternatives, for each area of contamination at SADA. Each sub-alternative was evaluated in terms of effectiveness,

TABLE 5
SUMMARY COMPARISON OF REMEDIAL SUB-ALTERNATIVES
SACRAMENTO ARMY DEPOT

Overall Protection of Human Health and the Environment		SELECTION CRITERIA			Estimated Cost	
Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume	Short-term Effectiveness	Implementability	Estimated Cost
South Port Groundwater Plume	1 No Further Action (continue pumping at current flowrate using existing GW extraction system)	Effective and permanent. Contaminants are gradually removed from subsurface. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Toxicity is reduced by mineralizing VOCs. Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping.	Effective. No new construction is required. Extracted groundwater is isolated at all times and no emissions or residuals result from the treatment process.	Easily implementable. The groundwater extraction and treatment system is already in place and operating.	\$ 4,002,664
	2 Groundwater Extraction Using Existing System; Increase Flowrate to 450 GPM	Effective and permanent. Contaminants are removed from the subsurface at a faster rate than sub-alternative 1. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Toxicity is reduced by mineralizing VOCs. Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping. Reductions occur at a faster rate due to the increased pumping rate.	Effective. Modifications to the treatment plant to increase capacity are easily made without risk of additional exposures. No emissions or residuals result from the treatment process.	Easily implementable. Groundwater extraction and treatment system is already in place and operating. Upgrade of treatment plant to 450 GPM is routine construction. Capacity rights to discharge additional flow is achieved by decreasing other flows to the POTW.	\$ 4,163,393
	3 Groundwater Extraction Using Existing System; Add 3 Zone A/B Extraction Wells	Effective and permanent. Contaminants are removed from the subsurface at a faster rate than sub-alternative 1 and 2. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Toxicity is reduced by mineralizing VOCs. Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping and strategic well placement.	Effective. Construction associated with additional extraction wells may result in brief exposures to construction workers; however, potential exposures are easily controlled with engineered controls and worker safety training. Modifications to the treatment plant to increase the capacity to 450 GPM are easily made without risk of additional exposures.	Implementable. Groundwater extraction and treatment system is already in place and operating. Upgrade of treatment system is routine construction. EW-10 is existing. Horizontal wells can be installed by a specialized contractor with little or no disruption to off-site property. Capacity rights to discharge additional flow is achieved by decreasing other flows to the POTW.	\$ 3,832,197
	4 Groundwater Extraction Using Existing System; Add 3 Zone A/B Extraction Wells; Add Zone C Extraction Well	Effective and permanent. Contaminants are removed from the Zone C aquifer at a faster rate than the sub-alternative 1, 2 & 3. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Toxicity is reduced by mineralizing VOCs. Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping. The toxicity, mobility, and volume of contaminants in the Zone C aquifer are reduced at a faster rate than sub-alternative 3.	Effective. Construction associated with additional extraction wells may result in brief exposures to construction workers; however, potential exposures are easily controlled with engineered controls and worker safety training. Modifications to the treatment plant to increase the capacity to 450 GPM are easily made without risk of additional exposures.	Implementable. Groundwater extraction and treatment system is already in place and operating. Upgrade of treatment system is routine construction. EW-10 & EW-11 are existing. Horizontal wells can be installed by a specialized contractor with little or no disruption to off-site property. Capacity rights to discharge additional flow is achieved by decreasing other flows to the POTW.	\$ 3,758,986
	5 Groundwater Extraction Using Existing System; Add 6 Zone C Extraction Wells; Air Spurge & Soil Vent; Add Zone C Extraction Well.	Effective and permanent. Contaminants are removed from the subsurface through pumping and volatilization of organics. Residual contaminants in groundwater will be below MCLs. Air sparging and associated vapor extraction, will reduce the time required for groundwater to reach FRGs. Monitoring will continue for a period following completion of remediation.	The air sparging system requires a substantial amount of off-site construction. Due to the large number of wells, substantial safety measures will be required. Large volumes of cuttings and development water will need to be covered, treated and properly disposed. Safety procedures will need to be implemented during carbon vessel recharging.	Implementation may be difficult. Off-site access for numerous wells will be required. Off-site remediation and GW extraction wells are potentially disruptive and may be challenged by off-site landowners.		\$ 6,920,383

TABLE 5
SUMMARY COMPARISON OF REMEDIAL SUB-ALTERNATIVES
SACRAMENTO ARMY DEPOT

Type of Contamination	SELECTION CRITERIA						Estimated Cost
	Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume	Short-term Effectiveness	Implementability	
Parking Lot 3 Groundwater Plume	1 No Further Action	Protective of human health and the environment.	Effective in the long-term provided exposure to groundwater does not occur within the 15 year period required for groundwater to reach FRGs. Natural attenuation is a slow but permanent process.	Toxicity will be reduced through dilution and biodegradation of organic constituents. The volume of impacted groundwater and the mobility of constituents in the groundwater will not be reduced.	Effective. No new construction is required. A potential exposure exists if new wells are installed into the affected aquifer before natural attenuation is complete. However, installation of new well does not result in unacceptable risk levels.	Easily implementable. No new construction or remedial actions are required.	\$ 1,349,800
	2 Pump from Existing Extraction Wells EW-8 and EW-9. Treat GW Using SPGWTP	Protective of human health and the environment.	Effective and permanent. Contaminants are gradually removed from subsurface. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Toxicity is reduced by mineralizing VOCs. Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping. Toxicity will be reduced through the treatment process implemented by the Sacramento Regional Sanitation District.	Effective. Only limited construction risk will be created. Brief exposure to workers could occur, but are easily controlled using construction safety procedures. Extracted groundwater is not pretreated prior to discharge; however this does not result in additional exposure risks to workers or the public.	Easily implementable. Extraction wells EW-8 and EW-9 are existing and the groundwater treatment system is already in place and operating. The SPGWTP is required to incorporate EW-8 and EW-9 with the existing extraction system is routine.	\$ 1,452,810
	3 Pump from Existing Extraction Wells EW-8 and EW-9. Discharge to POWT	Protective of human health and the environment.	Effective and permanent. Contaminants are gradually removed from subsurface. Residual contaminants in groundwater will be below MCLs. Monitoring will continue for a period following completion of remediation.	Mobility is reduced by establishing a hydraulic barrier to further migration. Volume is reduced by removing the contaminants from the subsurface through pumping. Toxicity will be reduced through the treatment process implemented by the Sacramento Regional Sanitation District.	Effective. Only limited construction risk will be created. Brief exposure to workers could occur, but are easily controlled using construction safety procedures. Extracted groundwater is not pretreated prior to discharge; however this does not result in additional exposure risks to workers or the public.	Fairly easy to implement. EW-8 and EW-9 are existing and tie-in to the sanitary sewer involves standard construction practices. Horizontal drilling may be required to cross the railroad tracks located along the water boundary of the depot. Implementability is dependent on the continued acceptance of current permit conditions by the Regional Sanitation District.	\$ 1,304,025
Building 300 Burn Pit Soil	1 No Action	Not protective of human health and the environment. This sub-alternative fails the detailed assessment and will not be evaluated further.	\$ 0
	2 Capping	Protective of human health and the environment.	Effective in reducing health risk by restricting surface exposure. Heavy metals and other contaminants will be left in the ground. The cap will require continuous monitoring. Future land restrictions will need to be placed on the area capped so that the cap is not disturbed.	Capping will not reduce the toxicity or volume of the contamination in the soil. Mobility of the contaminants may be reduced.	Exposure during construction of the cap are very low, since only clean soil is excavated and all hazardous waste safety guidelines and ambient air will be monitored.	Early implemented. Capping will be accomplished using well established construction techniques.	\$ 496,189
	3 Excavate/Stabilize (in-place)/On-site Disposal	Protective of human health and the environment.	Effective and permanent. The cement/soil mass can be expected to last indefinitely. A clean soil cover will be constructed over the stabilized material to allow for future construction activity.	Soil stabilization will reduce toxicity and mobility of the contaminants by locking the constituents in a cement matrix and preventing leachate. The volume of contaminants in the soil will remain the same.	Short-term risks exist. During excavation and soil stabilization, workers could come in contact with hazardous waste. There is also a chance of contact with unknowns, which may be encountered in the burn pit. Dust control technologies and air monitoring will be implemented to reduce exposures to dust.	Excavation and stabilization of soils will be implemented by a contractor. This is the process of soil excavation, stabilization, and backfill placement. The stabilization contractor will design the cement soil ratios using treatability test as a guide.	\$ 617,050

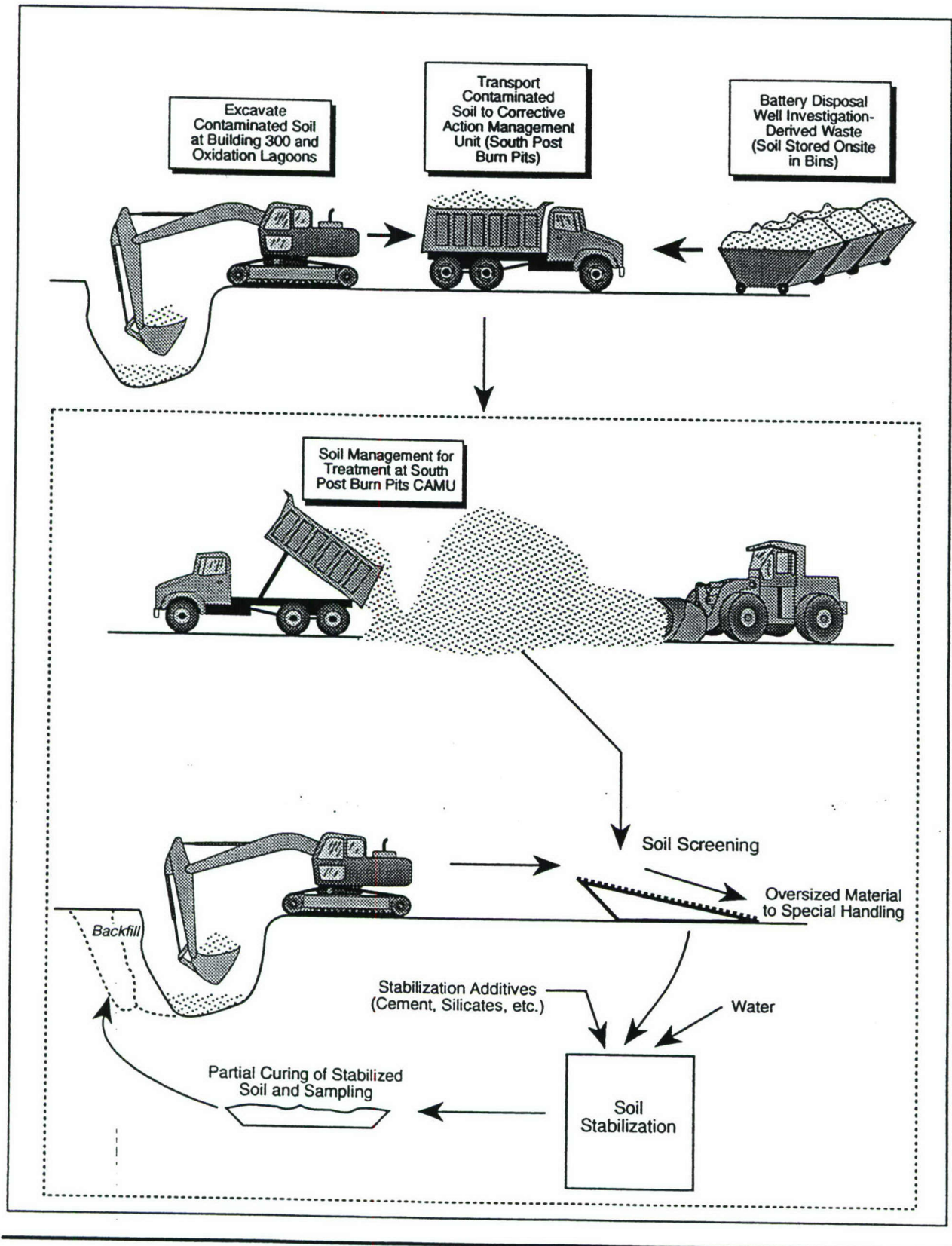
TABLE 5
SUMMARY COMPARISON OF REMEDIAL SUB-ALTERNATIVES
SACRAMENTO ARMY DEPOT

SELECTION CRITERIA									
Overall Protection of Human Health and the Environment	Compliance with ARARs	Long-term Effectiveness and Performances	Reduction of Toxicity, Mobility, and Volume	Short-term Effectiveness	Implementability	Estimated Cost			
4 Excavate/Consolidate/Stabilize/On-site Disposal (CAMU)	Protective to human health and the environment.	No ARARs waivers anticipated	Effective and permanent. The cement/soil mass can be expected to last indefinitely. A clean soil cover will be constructed over the stabilized material to allow for future construction activity. The creation of a corrective action management unit (CAMU) results in a centralized location for all stabilized soil and will facilitate the use of deed restrictions for future land use in order to further protect against disturbances of the stabilized material.	Soil stabilization will reduce toxicity and mobility of the contaminants by locking the constituents in a cement matrix and preventing interaction of the constituent with the environment. The volume of contaminants in the soil will remain the same.	Short-term risks exist. During excavation, soil stabilization, and the transportation of materials to the CAMU, workers could come in contact with the contaminated soil. There is also a chance of contact with unknown, which may be encountered in the burn pit. Dust control technologies and air monitoring will be implemented to reduce exposures to dust.	Excavation and stabilization of soils will be implemented by a contractor specializing in the process of soil excavation, stabilization, and backfill placement. The stabilization contractor will design the cement:soil ratios using existing data as a guide. Stabilization of Building 300 Burn Pits soils will be entered into the stabilization already planned for the South Post Burn Pits.	\$ 491,732		
1 Off-site Disposal	Protective of human health and the environment.	No ARARs waivers anticipated	Effective and permanent. Contaminated soil is physically removed from the site. The contaminated soil will no longer be under the direct control of the Sacramento Army Depot.	Toxicity, mobility and volume will no longer be relevant at the Depot since no contaminants will be present. At the off-site disposal facility, mobility will be controlled using standard landfill construction and operating procedures. Toxicity and volume may or may not be reduced depending on whether or not the contaminated soil undergoes treatment prior to disposal.	Short-term risks exist for the off-site disposal of soil. During loading and transportation operations workers could come in contact with the contaminated soil. Workers will be required to follow all hazardous waste safety guidelines.	Easily implementable. The bins of metal contaminated soil can readily be transported and disposed of at a Class I landfill.	\$ 80,384		
2 Consolidate/Stabilize/On-site Disposal (CAMU)	Protective of human health and the environment.	No ARARs waivers anticipated	Effective and permanent. The cement/soil mass can be expected to last indefinitely. A clean soil cover will be constructed over the stabilized material to allow for future construction activity. The creation of a corrective action management unit (CAMU) results in a centralized location for all stabilized soil and will facilitate land use in order to further protect against disturbance of the stabilized material.	Soil stabilization will reduce toxicity and mobility of the contaminants by locking the constituents in a cement matrix and preventing interaction of the constituent with the environment. The volume of contaminants in the soil will remain the same.	Short-term risks exist. During soil stabilization and the transportation of the bins to the CAMU, workers could come in contact with the contaminated soil. Dust control technologies and air monitoring will be implemented to reduce exposures to dust.	Stabilization of BDW soils will be implemented by a contractor specializing in the process of soil stabilization and backfill placement. The stabilization contractor will design the cement:soil ratios using existing data as a guide. Stabilization of the BDW soils can be easily accomplished as an addition to the stabilization already planned for the South Post Burn Pits.	\$ 53,624		

NOTES:

- 1) State acceptance to be evaluated after the agency comment period for the Basewide Feasibility Study and the Proposed Plan.
- 2) Community acceptance to be evaluated after the public comment period for the Proposed Plan.

Figure 7: Preferred Alternative: Soil



implementability and cost. The surviving sub-alternatives for soil and groundwater cleanup are presented in Table 4 for each area of contamination. Each of the surviving sub-alternatives were then assessed relative to the Superfund nine criteria: overall protection of human health and the environment, compliance with ARARs, short-term effectiveness, long-term effectiveness and performance, reduction of toxicity, mobility, and volume (TMV), implementability, cost, state acceptance, and community acceptance. These criteria are more fully described in Figure 6 located on page 9 of this fact sheet. A summary comparison of remedial sub-alternatives is shown in Table 5, page 10 of this fact sheet. The basewide remedial alternative was developed by selecting preferred sub-alternatives for each area of contamination.

Preferred Basewide Alternative

The Army's preferred remedial alternative for the basewide cleanup consists of the following sub-alternatives shown in bold-face print in Table 4, which is located on page 4 of this fact sheet:

Sub-alternative 4 for South Post Groundwater: Extraction and treatment

Sub-alternative 3 for Parking Lot 3 Groundwater: Extraction, discharge through a carbon filter to the regional sewer

Sub-alternative 4 for Building 300 Burn Pits Soil: Excavation, stabilization in CAMU

Sub-alternative 2 for Battery Disposal Well Soil: Consolidation, stabilization in CAMU

FOR FURTHER INFORMATION

The Army values community input in addressing cleanups of hazardous substances at SADA. Your comments are invited and encouraged. If you have any questions or concerns about the cleanup activities at Sacramento Army Depot, please direct them in writing to one of the following offices:

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Public Affairs Office

Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5052
(916) 388-3125

Dan Oburn

BRAC Environmental Coordinator
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5052
(916) 388-2251

Marlon Mezquita

Project Manager
U.S. Environmental Protection Agency
Region IX-H-9-2
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2393

Chris Parent

Project Manager
Cal-EPA
Department of Toxic Substances Control
10151 Croydon Way
Sacramento, CA 95827
(916) 255-3707

Robert Reeves

Project Manager
Cal-EPA
Regional Water Quality
Control Board
3443 Routier Road
Sacramento, CA 95827
(916) 255-3050

This remedial alternative is protective of human health and the environment and complies with all ARARs. If this alternative is implemented, the Army would establish a CAMU at the South Post Burn Pits. Contaminated soil from the Oxidation Lagoons, Battery Disposal Well, and Building 300 Burn Pits would be transported to the CAMU and stabilized, as shown in Figure 7. Creation of the CAMU will allow the Army to implement a reliable and effective corrective action which will minimize the potential for releases to the environment. Hazardous substances will not have to be transported off-site.

Groundwater in the South Post area,

including off-base contamination, would be cleaned up by installing additional extraction wells to increase the amount of water treated by the existing treatment system and shorten the time required to achieve the cleanup goals. Groundwater under Parking Lot 3 would be extracted, passed through carbon filters and then discharged to the Sacramento Regional Wastewater Treatment System, which also receives treated water from the South Post Groundwater Treatment Plant.

No further action or no action is proposed for all other areas on the depot, either because no contamination has been found, or because contami-

nation has been cleaned up to the extent that the area presents no risk to human health or the environment.

The selected remedy satisfies the statutory preference for treatment as a principal element. The principal threats to human health and the environment are volatile organic chemicals in groundwater and metals in soil. The preferred remedy addresses these threats through treatment by removing VOCs from the groundwater and destroying them using ultraviolet light or, in the case of Parking Lot 3, by thermal destruction offsite after capture on activated carbon. The metals in soil would be immobilized by adding stabilizers to the soil.

INFORMATION REPOSITORIES

The information repositories include site-related documents, including the cleanup plan for the entire base.

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California State
University
Sacramento Library
2000 Jed Smith Drive
Sacramento, California
95819
(916) 278-6291

Sacramento Army
Depot
Visitor Control
Building
8350 Fruitridge Road
Sacramento, California
95813-5052

George Sim
Community Center
6207 Logan Street
Sacramento, California
95820

GLOSSARY

ARARs - Applicable or Relevant and Appropriate Requirements: Federal, state or local standards, requirements, criteria, or limitations determined to be legally applicable or relevant to the Superfund site.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as Superfund

CAMU - Corrective Action Management Unit

National Priorities List (NPL) - EPA's list of the most serious hazardous wastes sites identified for possible long-term remedial action under Superfund.

Operable Unit (OU) - Discrete area within a project site identified on the

basis of similarity of contaminants, geology, hydrogeology, or other factors undertaken as part of a Superfund site cleanup.

Pilot Test - A field test used to determine if a technology will prove to be effective.

PAHs - Polycyclic aromatic hydrocarbons

RCRA - Resources, Conservation and Recovery Act.

Record of Decision (ROD) - A public document that explains which cleanup alternative(s) will be used at a NPL site.

Responsiveness Summary - Response to community comments on the Record of Decision.

SWUM - Solid Waste Management Unit

INSTALLATION/RESTORATION PROGRAM SACRAMENTO ARMY DEPOT

OPPORTUNITIES FOR COMMUNITY INVOLVEMENT

Public Comment Period:

During the public comment period, November 22, through December 21, 1994, you are encouraged to comment on the proposed basewide cleanup alternatives for the Sacramento Army Depot. Written comments may be sent to the Public Affairs Office, Sacramento Army Depot, 8350 Fruitridge Road, Sacramento, CA 95813-5012, attention Beverly Swift (916) 388-3125.

Community Meeting:

You are encouraged to attend an upcoming public meeting regarding the basewide cleanup. The meeting will be held at the George Sim Community Center, 6207 Logan Street (off Lemon Hill Avenue), Sacramento, at 7:00 p.m. on December 7, 1994. At this meeting, state and federal representatives involved in the project will describe the proposed cleanup plan. Community members will have the opportunity to ask questions and comment on the environmental cleanup program at the Sacramento Army Depot.

Public Affairs Office
Sacramento Army Depot
8350 Fruitridge Road
Sacramento, CA 95813-5012

Appendix A



TABLE I
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
AREAS ADDRESSING OPERABLE UNIT 101B					
Groundwater	On-base and off-base contamination by volatile organic chemicals (VOCs) in southwest area of SADA.	N/A	Monitoring of A/B, C and D aquifers since 1989. On-base and off-base wells are sampled. Samples have been analyzed for volatile organic chemicals (VOCs), metals, minerals and pesticides. Contamination is primarily in A/B aquifer.	Chloroform, carbon tetrachloride, trichloroethene, 1,2-dichloroethene, 1,2-dichloroethane.	Extraction using 7 vertical wells and treatment using hydrogen peroxide/ultraviolet method is ongoing. An interim ROD for on-base groundwater was signed in 1989. The Army is proposing remedial alternatives to address the entire plume.
Oxidation Lagoons (and west portion of Old Morrison Creek)	Waste holding ponds used for the disposal of plating shop wastes containing heavy metals.	1950-1972	Soil samples collected from each lagoon, drainage ditches, and Old Morrison Creek. Samples analyzed for metals. Contamination restricted to top 2-3 feet of soil.	Arsenic, cadmium, lead	The ROD was signed in 1992. Contract was awarded and pilot scale soil washing test was conducted. An amendment to the Oxidation Lagoons ROD, which would select a different remedy, is proposed.
South Post Burn Pits	Two pits used to bury and burn a variety of material such as plating shop wastes, paint sludge, mercury batteries, construction debris, and waste from Building 300 Old Burn Pits.	1950's - 1966	Soil samples collected from surface to 85 feet. Samples analyzed for VOCs, semi-VOCs, metals, polychlorinated biphenyls (PCBs), dioxins, furans. VOC contamination extends to groundwater. Other contaminants confined to the pits (surface to 20 ft. below surface).	Arsenic, cadmium, chromium, lead, 1,2-dichloroethene, trichloroethene	The ROD was signed in March 1993. Remediation of volatile organics by soil venting is in progress. Soil stabilization will follow. An amendment to the Burn Pits ROD, which would expand the scope of the stabilization to include soil from B.300, Battery Disposal Well, and Oxidation Lagoons, and would select a different cleanup standard, is proposed.
Tank 2	Soil contaminated by waste solvents from Tank 2.	Mid-late 1970's	Soil samples collected to 50 feet below surface. Samples analyzed for VOCs, semi-VOCs, organochlorine pesticides & PCBs. Contamination detected to 30 feet below surface.	2-butanone, ethylbenzene, xylenes, tetrachloroethene	The ROD was signed in 1991. Site has achieved cleanup standards using soil vapor extraction and is capped with concrete. "No further action" proposed.
AREAS REQUIRING REMEDIAL ACTION					
Building 300 Old Burn Pits	Two pits used for the disposal of plating shop wastes, paint sludge, acids, radium dial paint, and mercury batteries	1945-1950's	Soil samples collected from surface to 80 feet below surface. Samples analyzed for organochlorine/organophosphate pesticides, PCBs, VOCs, semi-VOCs, metals, dioxins, furans, radium 226/228.	Polychlorinated biphenyls, arsenic, cadmium, lead	Remedial alternatives are discussed in this proposed plan.
Battery Disposal Well	Area used for the disposal of dry cell batteries and other industrial debris.	1950's - 1960's	Soil and debris excavated to 30 feet below surface. Soil samples analyzed for VOCs, semi-VOCs, metals. Debris and contaminated soil were excavated during site investigation in April, 1993.	Cadmium, copper, lead, mercury, silver, zinc.	Excavated soil (investigation derived waste), stored in bins. Remedial alternatives for IDW soil are discussed in this proposed plan. Excavation has been backfilled with clean soil.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Parking Lot 3 Groundwater	Site consists of a parking lot approximately 280 ft. x 360 ft. located in western-central portion of the Depot.	1946-1951	48 soil vapor samples collected from 0-80 feet below surface. Soil samples collected from 11 borings to 80 ft. below surface. Samples analyzed for VOCs.	Trichloroethene (max. 480 ug/kg in soil gas), tetrachloroethene, 1,2-dichloroethene, 1,2-dichloroethane, carbon tetrachloride, chloroform	An air sparging/soil venting pilot test and vacuum extraction pilot test were completed. Confirmation sampling shows TCE removal of 95-98%. Residual concentrations in soil present no risk to human health or the environment. Short-term monitoring to confirm soil cleanup will be conducted as needed. Groundwater will be remediated. Cleanup alternatives are discussed in this proposed plan.
NO ACTIONING FURTHER ACTION AREAS					
Firefighter Training Area	Area reportedly used for Depot firefighter training purposes. Gasoline and JP4 ignited and burned in a pit.	1958-1963	Nine soil borings drilled. Samples collected from surface to 21 feet below surface and analyzed for VOCs, semi-VOCs, metals, organochlorine pesticides, PCBs, total petroleum hydrocarbons (TPH), dioxins, and furans	None	Reported site location was investigated and no contamination was found. "No action" proposed.
Pesticide Mix Area	Area used for the rinsing of pesticide containers. Rinse water was allowed to flow onto the open ground and seep into the soil.	? - 1981	Soil samples collected to 89 feet below surface. Samples analyzed for PCBs, VOCs, TPH, organochlorine/organophosphate pesticides. Contamination mainly in top 3-4 feet. Contaminated soil excavated during removal of drain well in April 1993.	4,4'-DDT, 4,4'-DDE, 4,4'-DDD, Prometon, chlordane	Investigation - derived waste disposed in Class I landfill. Excavation has been backfilled with clean soil. The area presents no threat to human health or the environment. "No further action" proposed.
Possible Trenches	Two parallel trenches indicated from a 1957 aerial photo. Not visible in a 1961 aerial photo.	1957-1961	8 borings were drilled to 21.5 feet below surface. Soil samples were collected from 1.5, 6, 11, 16, and 21 feet below surface. Samples were analyzed for VOCs, semi-VOCs, metals.	None.	Metals are reported at background levels. "No action" proposed.
Two Trenches	Site consists of a north/south trench and an east/west trench. This site is located adjacent to the Contractor's Spills Area and Old Morrison Creek.	1966-1968	8 borings drilled to 21.5 feet below surface. Samples collected at 1.5, 6, 11, 16, and 21 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals. VOCs detected.	1,1,1-trichloroethane (25 ug/kg) tetrachloroethene (5.1 ug/kg) Xylenes (10 ug/kg)	Metals are at background levels. Risk assessment for VOCs indicates no threat to human health or the environment. "No action" proposed.
Building 315 (Cyanide Sump)	Reportedly a 12,000 gallon sump used to hold waste containing cyanide, cadmium and zinc prior to transfer to the purported cyanide leach field.	1954-1956	4 borings drilled to 11.5 feet below surface. Samples collected at 1, 6, 11 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals, cyanide	None.	Metals reported at background levels. Site is covered by 8-12 inches of concrete. "No action" proposed, pending results of additional field investigation.
Building 316 (Acid Sump)	Reportedly a 12,000 gallon sump used to hold acid wastes and metals.	1983-?	3 borings drilled to 10 feet; 1 boring to 8 feet. Samples collected at 1, 5.5, 9.5 feet below surface. Samples analyzed for VOCs, semi-VOCs, metals, cyanide. pH ranged from 7-8.4 except one sample with pH 4.8. Elevated metals detected.	Zinc (148 mg/kg) Cadmium (21.7 mg/kg)	Site is covered by 8-12 inches of concrete. Risk assessment indicates metals present no threat to human health or the environment. "No action" proposed, pending results of additional field investigation.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Possible Shallow Lagoon	Initially indicated from a 1953 aerial photo as a shallow dry depression. Disposal of wastes at this site has not been documented and no evidence exists as to the use, storage or disposal of hazardous materials.	1953-1957	A soil gas survey was conducted to locate the site. Reported maximum total volatile hydrocarbons of 4 ug/L reported at depth of 0-3.5 feet below surface. Soil borings drilled at site 006 included this area. No contaminants were detected.	None.	This site is located in the same area as site 006. No contaminants were found in this area. "No action" proposed.
Building 382 (gasoline spills)	Reported spills of gasoline and oil near Building 382 and Warehouse 7.	Mid-1960's	4 borings drilled to 11.5 feet below surface. Samples collected at 2, 6, and 11 feet below surface. Samples analyzed for TPH. None detected.	None.	No gasoline or oil found in the samples analyzed. No risk to human health and the environment. "No action" proposed.
Paint, Residue and Waste Oil Dump	Site was reportedly used as a dump for paints, residues and waste oils. Site was indicated based on interviews with depot employees and not on physical evidence or sampling.	1946	A shallow soil gas survey was conducted to locate the site. Report maximum total volatile hydrocarbons of 4 ug/L found at depth of 0-3.5 feet below surface. Eight confirmation soil borings were drilled to 16.5 feet below surface. Samples were collected at 5 foot intervals. Samples were analyzed for VOCs, semi-VOCs, pesticides, TPH, and metals.	4,4'-DDE (.085 mg/kg) dieldrin (0.1 mg/kg)	Exact location of the reported site could not be confirmed. Risk assessment indicates pesticide levels in the area present no threat to human health or the environment. "No action" proposed.
Outdoor Storage of Wastes	Site was used for the storage of drummed hazardous waste containing metals.	1950's-1970's	6 borings drilled to 6.5 feet below surface. Samples collected at 1, 3.5, and 6 feet below surface. Samples analyzed for metals. Soil sample from 83 feet below surface analyzed for VOCs.	None.	Metals found at background levels. No VOCs detected. "No action" proposed.
Old Morrison Creek (east portion)	Portion of Old Morrison Creek which flowed through the eastern portion of the Depot based on past aerial photos. Potential contaminants which may have leached into the creek are petroleum wastes, oils and lubricants, and by-products of paint sludges.	1940's - ?	4 borings drilled to 6.5 feet below surface and samples collected at 2, 4, and 6 feet. Samples analyzed for TPH and metals. No TPH detected.	None.	Metals found at background levels. "No action" proposed.
Cyanide Leach Field (Building 320)	Reported leach field from the cyanide sump located east of the site. The leach field was reported to not work due to low permeability of the soil.	1963-1977	In 1990, 9 borings drilled to 4.5-5.5 ft. below surface. Samples collected at 1.5, 4.5 feet below surface. Samples analyzed for metals and cyanide. Cyanide detected at 1.5 and 4.5 feet below surface. In 1993, 1 boring drilled. Samples collected at 26.5, 36.5, 66.5, 76.5 feet below surface. Samples analyzed for VOCs. None detected.	Cyanide (0.78 mg/kg)	Metals are found at background levels. Cyanide level found presents no threat to human health or the environment. "No action" proposed, pending results of additional field investigation.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Fill Area with Numerous Vehicles	The site was reportedly used for open storage of vehicles and equipment, and possibly is contaminated with petroleum hydrocarbons.	1957-1968	<p>1) 4 borings drilled to 11.5 feet below surface. Samples collected at 1.5, 6, and 11 feet. Samples analyzed for VOCs, semi-VOCs, TPH. TPH found in one sample at 6 feet.</p> <p>2) A shallow soil gas survey was conducted to verify the extent of TPH. No TPH reported. TCE (0.03 ug/L) and PCE (2 ug/L) were found at depth of 1 foot.</p> <p>3) 2 confirmation borings drilled to 16.5 feet below surface. Samples were collected at 5 foot intervals. Samples analyzed for VOCs, pesticides, TPH. TCE, PCE, BTEX not detected. Pesticides detected.</p>	<p>Total petroleum hydrocarbons (TPH) (140 mg/kg)</p> <p>Trichloroethene, tetrachloroethene</p> <p>4,4'-DDD (0.041 mg/kg) 4,4'-DDE (0.017 mg/kg) 4,4'-DDT (0.023 mg/kg) dieldrin (0.034 mg/kg) chlordane (0.004 mg/kg) Freon 113 (0.015 mg/kg)</p>	Unknown TPH was an isolated event. Additional investigation did not confirm the presence of TPH. VOCs not detected in confirmation borings. Pesticide levels in the area present no threat to human health or the environment. "No action" proposed.
5000-gallon Hazardous Waste Tank No. 1	Tank No. 1 was an underground storage tank used for the storage of battery acid from the mid 1950's to the late 1970's. Tank was removed in 1986. Site is covered with concrete.	1950's - 1970's	Five borings drilled to 21.5 feet below surface. Samples collected at 4, 6, 11, 16, and 21 feet below surface. Samples analyzed for VOCs, semi-VOCs, organo-chlorine pesticides and PCBs. None detected.	None.	"No action" proposed.
Contractor's Storage Area	Site is located north of Building 348 and has been reportedly used for the storage of construction materials and some waste materials by contractors working at SAAD. The site is covered with grassy vegetation.	1970's - 1980's	6 borings were drilled to 11.5 feet below surface. Samples were collected at 2, 5.5, and 11 feet. Samples were analyzed for VOCs, semi-VOCs, metals. No VOCs, semi-VOCs were detected.	None.	Metals concentrations found at background levels. "No action" proposed.
Small Shallow Lagoon	Topographic low located east of Oxidation Lagoons may have received surface water runoff.	Mid 1960's to early 1970's	1 soil boring drilled in low area. Soil samples analyzed for metals.	None	Metals at background levels. "No action" proposed.
Sludge Piles	Piling south of the Oxidation Lagoons with possible metals contaminated soil.	Late 1950's to late 1960's	In 1994, 3 soil borings drilled. Samples collected at 0, 5, & 10 ft. below surface. Samples analyzed for metals.	None	Metals at background levels. "No action" proposed.
Trash Disposal Areas	Trenches located south of Burn Pits with construction debris.	Early 1950's to mid 1960's	IR survey showed no anomalies. No trenches visible in aerial photos. Sites are located near residential housing for depot commander, and not likely hazardous waste disposal sites.	None	No evidence of hazardous waste disposal at these sites. "No action" proposed.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Radioactive Waste Disposal Area	Reported dump area for radioactive material in southwest corner of depot.	Late 1940's	A surface survey to screen for radioactivity has been conducted in suspected area. None detected above background levels. Aerial photo review shows no evidence of trenching or pits. Groundwater analyzed for radium. None detected. Random borings show no evidence of radioactivity.	None	No visual evidence that site existed. Site does not show elevated radioactivity. "No action" proposed.
Dispensary Waste Area	Reported dump area in southwest corner of depot.	1960's	Visual inspection of area and aerial photos show no evidence of the site. Documented waste disposal practices show disposal in Burn Pits or off-base. IR survey conducted. No anomalies found.	None	No indication site ever existed. "No action" proposed.
Petroleum Sludge Disposal Area	Reported dumping of gasoline tank sludge south of the running track.	Late 1950's	Two borings drilled. Samples collected at 0, 5 feet below surface. Analyzed for TPH, lead. No TPH found. Lead at background levels.	None	Sampling found no evidence of contamination. "No action" proposed.
Previous Oil Dump Area	Reported dumping of oil in the southeast corner of depot.	Mid 1960's	Two near surface soil samples collected and analyzed for oil and grease. None detected.	None	No oil or grease found in soil samples. "No action" proposed.
Former Secondary Sewage Treatment Plant	Sewage treatment plant west of Building 320 received wastewater from plating operations.	1940's to 1972	5 borings drilled to 10 feet below surface. 18 samples analyzed for metals.	None	Metals concentrations in soil typical of background. "No action" proposed.
AAFES Drain Well	Surface drain well southeast of Building 699, at the AAFES gasoline station.	Unknown to Present	GPR survey in 1994. Drain well and pipe removed. Samples collected from sides and bottom of excavation and below drain pipe. Samples analyzed for TPH.	None	Soil samples give no evidence of contamination. Drain well has been removed. "No action" proposed.
Rail Yard Engine Shed (Locomotive Repair Area)	Site consists of two buildings used for the maintenance of the Depot's locomotive switch engine.	1940's - present	IR survey reported elevated temperatures beneath concrete pad south of B. 205. Soil samples indicate gasoline and diesel to 10 feet below surface.	Gasoline Diesel	An in-situ bioremediation pilot test is being conducted at this area. The Railroad is not under CERCLA jurisdiction, per CERCLA Section 101, because only petroleum hydrocarbons are present. Area will be cleaned up prior to property transfer.
Building 420 Chronic Acid Spill	B. 420 spilled chromic acid.	1978	Based on interviews, spill occurred in NE corner of building and was contained. Two borings drilled outside buildings to approx. 7 feet below surface. Soil samples analyzed for chromium. Downgradient wells sampled. No evidence of contamination.	None	Chromium was detected at 26 mg/kg, a level typical of background. No chromium in groundwater downgradient of the site. "No action" proposed.

TABLE I
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
1,000 Gallon Solvent Tank #3	UST containing solvents south of Building 348.	Mid 1950's to late 1970's	Downgradient wells sampled and analyzed for VOCs. Record search shows no evidence this tank existed.	None	No evidence of an underground tank, or of groundwater contamination from tank. "No action" proposed.
500 Gallon Battery Acid Storage Tank #4	UST containing battery acid south of Building 348. Tank removed in 1986.	Mid 1950's to late 1970's	Tank was located in a below-grade cement-floored enclosure. No stains on cement. Downgradient wells show no evidence of contamination from tank.	None	No evidence of leakage from tank, or of groundwater contamination. "No action" proposed.
Sewage Outfall	Outfall at western edge of depot, north of Oxidation Lagoons.	Late 1950's to late 1960's	Outfall removed when Morrison Creek was widened and paved in 1980's.	None	Site no longer exists. "No action" proposed.
Building 320. Plating Spill	Spills from plating operations, containing metals.	1950's to 1970's	2 borings drilled to 40 feet below surface. 6 samples collected and analyzed for metals. Downgradient wells analyzed for metals. Additional samples taken during investigation of site 021, and analyzed for metals.	None	Contaminated soil removed at time of spill. Metals at background levels. "No action" proposed.
Morrison Creek	Creek running around perimeter of depot may have received wastes from industrial processes.	1940's to early 1980's	Creek was widened and paved in 1980's. Contaminated soil was removed. Depot had industrial waste disposal facilities in place prior to contaminated soil removed.	None	"No action" proposed.
Possible Open Storage Area (Building 150)	Open storage area for construction materials, west of Building 150.	1947-1950	Site stored construction materials only.	None	"No action" proposed.
Possible Open Storage Area (Buildings 246 & 248)	Open storage area for construction materials between Building 246 & Building 248.	1947-1950	Site stored construction materials only.	None	"No action" proposed.
Possible Open Storage Area (Building 426)	Open storage area for construction materials southeast of Building 426.	1947 to 1950	Area was paved by 1946, prior to storage. IR survey shows no anomalies.	None	"No action" proposed.
Possible Open Storage Area (Building 555)	Open storage area for construction materials south of Building 555.	1947 to early 1960's	Site stored construction materials only.	None	"No action" proposed.
Possible Dump Site	Open field used for vehicular activity.	1948-1950	IR survey shows no anomalies. Groundwater sample collected west of site, and analyzed for VOCs. None detected. Aerial photos do not show disposal activities.	None	No groundwater contamination found. "No action" proposed.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Large Disturbed Area	Surface disturbance near eastern border, reportedly the site of swamp vehicle testing.	1947 to early 1960's	Swamp vehicle testing area only.	None	"No action" proposed.
Possible Trench	Surface depression.	Early 1950's	Trench visible for less than 3 years on aerial photos. Appears to be construction storage.	None	"No action" proposed.
Possibly Fill Activity	Scarred surface area north of Oxidation Lagoons.	Early 1950's	Soil gas investigation and soil sampling in 1991/92. Sample analyzed for VOCs, SVOCs, TPH. Infrared survey shows no anomalies.	None	No contaminants detected during sampling. "No action" proposed.
Possible Dump Site	Open storage area for construction debris, northeast of Oxidation Lagoons, near the Battery Disposal Well (BDW).	Early 1950's	This area is the surface expression of activity at the BDW. Topsoil has been removed from the area. No groundwater contamination found in this area.	None	"No action" proposed.
Possible Fill Material	Soil piles from construction, south of Oxidation Lagoons.	Early 1950's to late 1970's	Area was investigated during Burn Pits RI. Samples analyzed for metals. Elevated lead found at surface.	Lead	Contaminants are associated with transfer of material from B. 300 to the South Burn Pits. Burn Pits area is under remediation and will include the area around site 049. "No further action" proposed.
Excavation Activity	Soil piles from construction, between Building 555 and the eastern site boundary.	Early 1960's	Construction materials only stored at site.	None	"No action" proposed.
Standing Liquid	Area of standing water near eastern border, seen in aerial photo.	Mid 1960's	Standing water is a common occurrence due to hardpan layer. This was not a disposal area.	None	"No action" proposed.
Scarred Stressed Area	Surface scarring northeast of Oxidation Lagoons.	Mid 1960's	Area investigated during investigation of site 010. 8 borings drilled to 21.5 feet below surface. Samples collected from 1.5 to 21 feet below surface. Analyzed for VOCs, SVOCs, metals.	None	Metals at background levels. Soil samples indicate no contamination. "No action" proposed.
Contractor's Spoils Area	Site consists of a number of soil piles with various amounts of construction debris (e.g. asphalt, concrete, scrap metal), and various organic material such as grass cuttings.	1966-1980's	Soil sampling of surface and near-surface soils and debris piles. Analytical result indicate presence of Freon 113, lead, zinc, PAHs and phthalates typical of the construction materials found. Site debris will be removed prior to base closure.	Benzo(a)pyrene (0.49 mg/kg)	Bi(a)P was detected in one sample at 1 foot below surface. The compounds found are associated with the construction debris. Risk assessment indicates no threat to human health or the environment. "No action" proposed. This area will be graded and the debris separated and removed.

TABLE 1
SITE SUMMARIES

Site Name	Site Characteristics	Date of Operation	Summary of Site Investigations	Contaminants of Concern	Status
Freon 113 Area	Site consists of a square-shaped area approximately 10 acres in size located in the vicinity of Buildings 300, 321, 325, 330, 420 and 423. Freon 113 and other VOCs in localized soil and groundwater.	1950's-1970's	Soil and soil gas samples collected from 16 borings. Groundwater samples collected from 5 borings. Samples collected from surface to 130 feet below surface. Suspected sources are drains in B. 320 sewer lines, cleaning operations in B. 420 and 423.	Freon 113 (max. 2750 ppmv) in soil gas Chloroform (max. 188 ppmv) in soil gas	An air sparging pilot test was conducted at this site. Residual contaminants in soil present no risk to human health or the environment. Short-term monitoring to confirm cleanup of soil will be conducted as needed. Groundwater concentrations are below the maximum contaminant levels (MCLs) for drinking water. "No further action" proposed.

Closing Ceremony Folder

HISTORY of the SACRAMENTO ARMY DEPOT

ONE SHORT MONTH AFTER PEARL HARBOR, the United States Army Quartermaster Corps initiated actions to create a supply depot to relieve the inevitable wartime workload at the Port of Embarkation in San Francisco. This new depot would be located at the California State Fairgrounds in Sacramento and was to be designated the Sacramento Advanced Communication Zone Depot.

Within the next year, the depot's name was changed to the California Quartermaster Sub-Depot in Sacramento and moved to the vacated Bercut-Richards Packing Plant on North Seventh Street. The depot existed without the general awareness of the local populace due to the necessities of wartime security.

The depot quickly expanded its sphere of operation, shipping vital supplies not only throughout Oregon and California, but in support of the Seventh Division in the Attu Campaign and the joint attack on Kiska conducted by elements of both the U.S. Army and a Canadian contingent.

On June 1, 1943 the depot was officially designated the Sacramento Signal Depot by order of the War Department, Army Service Forces, and in October, plans were activated that transferred a significant portion of the personnel and equipment of the Signal Section Depot, Ogden, Utah, to the Sacramento facility. This transfer would form the nucleus of a signal/communications repair facility that would become the primary mission of the depot for years to come.

A little known function of the Depot during the later years of World War II was that it served as the location for hundreds of German prisoners of war taken during the North African Campaign. These prisoners were housed in a "tent city" and some actually performed work at the Depot.

Continuing supply needs of the ever increasing Pacific Theater resulted in the requirements for a larger facility and on April 15, 1945, the search for a new site was authorized. The evaluation of several potential sites culminated in the selection of the current location at Fruitridge and Florin-Perkins Road, then seven miles southeast of Sacramento. Initial construction of the facility began on July 5, 1945 and was completed in November 1946. The site was officially designated as the Sacramento Signal Depot on November 1.

Even with the termination of World War II hostilities, the mission and responsibilities of the Depot continued to grow and it was designated the lead depot for Zone III of the Sixth Army Ordnance Maintenance Area, which included the Sierra Ordnance Depot, the Sharpe General Depot and the Stockton sub-depot of the Benicia Arsenal.

The Sacramento Signal Depot became active in producing and shipping major amounts of material to foreign nations under the Mutual Defense Assistance Act of 1949. In March 1950, the first of what would prove to be many shipments, was consigned to three European ports. This shipment contained approximately 200 separate crates and weighed approximately 22,000 pounds.

The growing expertise of the Depot and its personnel was further tested in the early 1950's with the outbreak of the Korean War.

Personnel from the 504TH Signal Base Maintenance Company were the first Army unit to handle communications at the atomic maneuver site at Camp Desert Rock, Nevada, and assisted in the activation of Camp San Luis Obispo as an Army training installation.

In 1962 the Sacramento Signal Depot was the result of an Army reorganization which established the U.S. Army Material Command as the depot reporting organization.

The advent of the Vietnam War challenged the depot and its personnel as no other previous conflict had. Not only did support requirements stretch the limits of capability, but for the first time, a significant number of depot employees were providing service and support for their own sons and daughters.

While the United States returned to a more peaceful time during the 1970's and 1980's, the mission challenges of the Depot continued, as its role transitioned into the high technology world of miniaturized electronics and "real time" communications and intelligence in support of the Cold War.

Rising to these challenges, the Sacramento Army Depot received the Chief of Staff, Army Award as the "Best Installation of its Size" was designated a "Community of Excellence" in 1988. During the same time period, Depot employees played a critical role in the support of the action

in Grenada and in "Operation Just Cause" in Panama.

However, despite the Depot's years of dedicated and quality service in support of U.S. Army operations through the world, the Sacramento Army Depot was designated as a Department of Defense facility scheduled for closure as part of the 1991 Base Realignment and Closure Commission. The closure decision were necessitated by continued reductions in defense spending, force structure decline, and the resulting less than capacity workloads at the many and varied existing maintenance depots.

Despite the uncertain future for all Depot employees caused by the planned Depot closure, the employees responded as they always had, to the call for support during "Desert Shield/Desert Storm" with enthusiastic and unparalleled dedication to the allied efforts in one of the

largest movements of personnel and equipment the world had seen.

The Sacramento Army Depot has served the nation with honor and dignity for over 50 years. Its personnel have discharged whatever duty they were assigned in a quality and professional manner, not only in support of our servicemen and women in all corners of the globe, but in the Sacramento Community, where Depot personnel involvement in local, national and international worthy causes and activities became a standard to be measured against. The Sacramento Army Depot will be remembered not only for its invaluable contributions to our military forces, but for its "heart and soul"; its people. The Depot has now completed its final mission, "Closure with Pride and Dignity."

PRESIDENT'S FIVE PART PLAN

for Revitalizing Base Closure Communities

FOR THE 1988 AND 1991 BASE CLOSURES, property disposal methods focused on maximizing proceeds from the sale of real and personal property with little regard for enhancing the prospects for economic recovery in the community. However, this way of doing business was not the most beneficial to economic revitalization of base closure communities.

Recognizing this, the Clinton Administration introduced, on July 2, 1993, a five-part program to speed the economic recovery of communities where military bases are scheduled to close. The President's plan shifted the focus from (1) selling land to the highest bidder to empowering communities to decide how best to reuse the property, and (2) viewing the closing military base not as surplus property, but as an economic engine for job creation. The goal is to reduce the time it takes to turn closing bases over the communities and foster job creation and economic development. The Administration approach consists of the following five components, all of which were enacted into law through the FY94 National Defense Authorization Act.

Jobs-centered property disposal that puts local economic redevelopment first. Previously, federal law authorized conveyance of property at a reduced rate, or even for free, for recreation, school facilities, or other specific public purposes, but not for job creation. The law has been changed to permit DoD to convey property for job creating business development, when certain conditions exist. Interim leases are encouraged and authority has been delegated to lower levels to speed approval of interim leases and simple land transfers. The law also accelerated the federal property screening process for reuse of facilities and equipment. Finally, DoD is prohibited from removing personal property from a closing base until it has been inventoried and made available to the local community. These changes allow communities to begin their reuse planning without delay.

Fast track clean-up that removes needless delays while protecting human health and the environment. A Base Cleanup Team (BCT) has been established at all closing or realigning installations where property is available for transfer. The BCTs, comprised of experts from DoD, the Environmental Protection Agency (EPA), and State representatives, conduct a "bottom up" environmental review of cleanup

plans and are empowered to make decisions to accelerate the environmental remediation timeline. The BCT also identifies and makes available for reuse all uncontaminated parcels, or with contamination below cleanup levels, within 18 months. DoD will encourage and facilitate reinvestment through the use of leases where cleanup is not complete and will accelerate cleanup through all available means.

Transition coordinators at major bases identified for closure. A transition coordinator has been assigned to closing bases in adversely impacted communities to serve as the information source for all base closure related activities and a central point of contact on-site for communities. They work with the communities to identify reuse needs and see that those needs are met whenever possible. In addition, base transition coordinators cut through red tape to get interim leases approved quickly and speed up the entire screening and disposal process. They work with Federal and State agencies to keep environmental cleanup on a fast track and to push for the priority treatment of parcels of land having the potential for rapid development.

Larger economic development and planning grants to base closure affected communities. The Office of Economic Adjustment (OEA) awards planning grants to communities. By the end of FY93, OEA had awarded planning grants of nearly \$23 million to 56 communities affected by the 1988, 1991, and 1993 closures. With additional funding, OEA will provide planning grants averaging \$1 million over five years, or \$3.5 million for communities with multiple base closures. The planning grant approval process will be accelerated, facilitating earlier reuse planning and resulting in quicker economic reinvestment.

Easy access to transition and redevelopment assistance for workers and communities. The Administration has revitalized existing assistance programs with additional funding and streamlined procedures. Funding is targeted, as allowed under Federal law, to better meet the needs of communities affected by base closures. Several community assistance programs were augmented, retraining and other transition assistance programs for laid-off DoD civilian employees were provided increased funding. By targeting federal assistance of other Federal agencies, communities are getting the assistance they are eligible for with less red tape.



PERSONNEL OUTPLACEMENT EFFORTS

at Sacramento Army Depot Activity

WHEN SACRAMENTO ARMY DEPOT ACTIVITY was put on the BRAC 91 list, there were about 2,800 civilian employees on the base employed by the Depot and its tenant activities. The Commander's number one priority was to "take care of the people" and outplacement efforts were started early. The goal to close with no involuntary separations was almost achieved. Efforts on behalf of employees included:

Communications

- Civilian personnel bulletins were published frequently, providing updated information on closure issues, benefits, etc. Employees preferred a question and answer format for these bulletins.
- Live LAN (Local Area Network) broadcasts were conducted on a weekly basis or more often if necessary. A panel consisting of the Commander, Civilian Executive Assistant, Civilian Personnel Officer, and Union representative would update employees on current issues, then open up a phone line so that employees could call in live, ask questions and receive answers.
- An "employee reference journal" was given to each employee, containing booklets on reduction in force, severance pay benefits, priority placement program, anticipated questions and answers.

Outplacement

- The FOCUS (Future Opportunities, Careers and Ultimate Success) outplacement center was opened in late 1991. It was equipped with the latest programs on vacancies throughout Federal, State, city, county, and private industry. Computer software programs for preparing SF 171s and resumes were available, as were copy and fax machines and phone lines. Staff consisted of both personnel and non-personnel specialist, who surveyed employees at the beginning to see what services they wanted.

- Employees were allowed 50 hours of FOCUS time, without charge to leave, for job interviews and time in the outplacement center.

- A retraining grant through Department of Labor's Job Training Partnership Act was requested and approved early on. Classes were held on interviewing, preparing government applications and resumes, and entrepreneurship. Counselors from local colleges presented classes on making career changes and choices.

- A letter was sent to major employers in the area, soliciting their help in placing Depot employees. Job fairs, with organizations outside and inside the geographic area, were held on Depot.

Priority Placement Program

- Authorities for exceptions to the standard registration timeframes and parameters were obtained.
- Personnel staff began to receive job offers themselves, so retired Federal workers were hired on a contract basis. Because contracted personnel weren't looking for a job themselves, they were able to devote 100% of their time to networking with other agencies, counselling employees, and other PPP work.

Reduction in Force

- The RIF wizard program developed at Rock Island Arsenal was used. A user friendly program, it automatically prints all letters, documents, all required audit trails, and produces statistical reports on any aspect of the RIF.

Lessons Learned

- Employees often didn't communicate with their spouses regarding the geographic area for which they would accept job offers.irate spouses would call want-

ing to know why the Depot was forcing their family to uproot.

- Despite all the transition assistance offered (Stress Management, financial and Relocation Counselors), many employees remained in denial that the base would actually close until the very end and did little to help themselves secure new employment.

- “Base operations” employees (i.e., personnel, resource management, and contracting specialist) were the first to receive job offers. Be prepared for losses in these areas early and have a contingency plan ready.

- Due to the frequent opening of narrow windows for early retirement and separation incentives, each employee was give

a separation incentive calculation and if eligible, a retirement estimate. Then, when a window did open, the employee had the necessary information upon which to base a decision.

- Labor Organizations played a very active part in downsizing efforts. By involving them in the process and advising them of decisions up-front, three RIF’s were conducted without any formal grievances.

- Employees that are willing to relocate will most likely find another Federal position. If the employees separated at Sacramento had been willing to leave the commuting area, they would not have been separated.

OUTPLACEMENT EFFORTS PUT PEOPLE FIRST

and it paid off at Sacramento Army Depot

IN AUGUST OF 1991, Congress approved the closure of Sacramento Army Depot...a hightech electronics and communication repair and maintenance facility. The depot employees worked on a wide range of material from standard radios to modern night vision goggles...highly skilled employees working with the "state of the art" equipment.

It was the employees, though, who were the greatest asset. This was the first thought and the greatest challenge that faced command...looking to the future of the dedicated employees who served their country long and well.

Management at the depot utilized a variety of strategies to assist employees in their search for continued employment and to "outplace" its work force.

First, the commander directed the establishment of a state of the art outplacement center that became known as FOCUS (Future Opportunities, Careers and Ultimate Success). The center, which opened in March of 1992, provided a "one stop" place for help and resources in career assessment, resume writing, interviewing techniques and finding those elusive job openings.

Classes were held frequently to help individuals cope with the upcoming changes in their lives. The classes covered a wide range of subjects such as relocation assistance, dealing with the loss of income, stress management, anger reduction and coping with change.

Classes and the use of the FOCUS Center was open to all depot employees and military, spouses and immediate family members, who were also affected by the closure of the depot.

Countless numbers of employees attributed their successful job search was as a direct result of the help they received from the FOCUS Center and at least 94 employees obtained new jobs directly from openings they learned about at the FOCUS Center.

The most successful approach undertaken by the depot was its aggressive use of the Department of Defense

(DoD) Priority Placement Program (PPP). The commander secured approval to register employees in the program up to a year and a half in advance of the anticipated loss of their jobs. Registrations in PPP began in June of 1992.

Many of the human resource support staff found other employment early. Their loss was filled with contractor personnel who registered employees and coordinated all job offers with other defense bases.

As of January 24, 1995, 1089 employees were placed in continuing DoD jobs through the PPP.

Also available to employees was the DoD Voluntary Separation Incentive Pay (VSIP) program. This program offered employees up to \$25,000 who chose to voluntarily resign or retire. The incentive was first offered in February of 1993 and was available to employees on an almost continuous basis since that date. As of January 24, 580 employees have taken advantage of the VSIP program.

Finally, local initiatives led to the approval of another program which matched depot employees with counterparts at other DoD bases whose jobs were not being eliminated, but who were willing to retire or leave federal services with VSIP. In "exchange," a depot employee was transferred to the DoD activity that was not closing.

The depot began the exchange approach within the Army in September of 1993 and later expanded the program to cover other bases within DoD. The depot placed 167 employees at other installations through the "exchange" program.

Through these programs the DoD is able to retain the highly skilled employees at other ongoing installations. Other employees have moved on to other careers and the FOCUS center was not lost when the depot closed. All the assets of this "state of the art outplacement center" are now available at McClellan Air Force Base for use by all federal employees in the area.



ECONOMIC DEVELOPMENT CONVEYANCE

of Sacramento Army Depot Activity

THE ARMY AND CITY OF SACRAMENTO are negotiating final details on the City's request for Economic Development Conveyance (EDC) of 367 acres of the 485 acre Sacramento Army Depot Activity (SADA). A BRAC '91 closure site, SADA formerly repaired and maintained communications/electronic equipment and electro-optics/night-vision devices. The maintenance mission ceased in April, 1994, and the depot will officially close on March 3, 1995, nearly two and a half years ahead of its July 1997 mandated closure date.

The City's EDC request is consistent with the President's five part program to enhance local reuse of closed military bases. An interim final rule published in April 1994, and amended in October 1994, implemented requirements in Section 2903 of the National Defense Authorization Act for FY94. This interim rule identifies economic development conveyance as a valid means of transferring excess federal property to create jobs and stimulate redevelopment in areas affected by base closures.

Sacramento's initial EDC request was centered around long term redevelopment of the site to replace the approximately 3000 jobs lost by depot closure. Recently, Packard Bell Electronics, Inc., expressed interest in establishing a computer assembly plant at the former depot. The City of Sacramento subsequently negotiated a long-term lease with Packard Bell, which will bring up to 4000 jobs to the site, along with 2500 ancillary jobs to the area. Packard Bell's initial presence on about 122 acres of the depot property is supported by an interim lease which was signed by the City and the Army on December 14, 1994. Packard Bell produced its first computers at the Sacramento site in January 1995, with full production slated to follow in April/May 1995.

The projected date for deed transfer of the requested property to the City is March 3, 1995, to coincide with the depot closure ceremony. About 80 acres of the depot property has been set aside as Army and Navy reserve centers. Of the remainder, about 29 acres will be conveyed in March to a McKinney requestor, California Emergency Foodlink, while about 9 acres will go to a Public Benefit Conveyance requestor, Sacramento State University.

Environmental cleanup of the site is well underway, with most cleanup projects already completed. Both the EIS Record of Decision (EIS-ROD) and the Basewide Cleanup ROD were signed in January '95, indicating agreement on proposed reuse of the property and final cleanup strategies.

Sacramento Army Depot is the first EDC-requested transfer where the majority of the site will be conveyed so soon after closure. In addition, the City will assume operation of the utilities infrastructure when the property is conveyed, thus eliminating the costs for a lingering Army caretaker workforce.

What is an Economic Development Conveyance (EDC)?

AN EDC IS A NEW PROCESS for transferring real property to a Local Redevelopment Authority (LRA) to help spur local economic development and job creation. An EDC may be with or without initial payment or with only partial payment at time of transfer, may be at or below the estimated fair market value of the property, and allows for negotiated terms and conditions of payment (consideration) to the Department of Defense. These negotiations must be fair and reasonable to both parties and strike a balance between compensation to the Federal taxpayer and the need for the EDC to spur redevelopment. Authorized by Title XXIX of Public Law 103-160 (the National Defense Authorization Act for FY94), the EDC offers LRAs an additional tool to use in the acquisition of former military base property.

When should an EDC be used?

PREVIOUSLY, FEDERAL LAW authorized conveyance of property at a reduced rate, or even for free, for recreation, school facilities, or other specific public purposes, but not for job creation. The law has been changed to permit DoD to convey property for job creating business development, when certain conditions exist.

The EDC should be used when the LRA wants to obtain property for job generating purposes and it is not practi-

cable to pay fair market value at the time of transfer. However, the EDC is not intended to supplant other Federal property disposal authorities and cannot be used if the intended land use can be accomplished through another authority unless unusual circumstances are presented that demonstrate that the needed economic development and job generation cannot occur under the other allowable federal transfer authority.

**Who can receive an
Economic Development Conveyance?**

AN LRA IS THE ONLY ENTITY eligible to receive property under an Economic Development Conveyance. An LRA

should have broad-based membership, including, but not limited to, representatives from those jurisdictions with zoning authority over the property. The Secretary of Defense shall officially recognize an LRA for planning and/or implementation through the Office of Economic Adjustment. Consequently, applications submitted by entities other than LRAS will not be considered.

THE DEPOT'S ENVIRONMENTAL PROGRAM

IN JULY OF 1984, the Sacramento Army Depot was first identified by the U.S. Environmental Protection Agency (U.S. EPA) as a potential federal Superfund site on the basis of its groundwater and soil contamination. The site was placed on the National Priorities List (NPL) effective August 2, 1987. The NPL serves as an information and management tool for identifying facilities and sites which warrant further investigation to determine if they pose a threat to human health or the environment.

Extensive environmental studies have been conducted at the depot to assess conditions at potentially contaminated sites. These investigations have consisted of both record searches and field investigations dating back to 1979.

In December of 1988, the Army, the EPA, and the State of California signed a Federal Facility Agreement under Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The agreement was one of the first to be signed in the western United States. Under this agreement, the Army agreed to evaluate the entire facility, including the contaminated groundwater and several areas of suspected soil contamination.

The Army's strategy for remediating the site has been to accelerate the investigation of potential areas of contamination and remediate areas to protect human health and the environment. In order to meet these goals, the Army prioritized areas of the depot for investigation based on historical information indicating a potential for contamination.

Eight areas were given first priority for investigation because they were believed to have the greatest potential for release to the environment. These areas included South Post Groundwater, Tank 2, Oxidation Lagoons, South Post Burn Pits, Building 300 Burn Pits, Firefighter Training Area, Pesticide Mix Area, and Battery Disposal Well. Four of these sites (Groundwater, Tank 2, Oxidation Lagoons, and Burn Pits) were investigated as operable units and addressed by operable unit Records of Decision (RODs). Designating specific areas as Operable Units allowed the depot to prioritize and expeditiously clean up individual sites with the greatest environmental concern.

An additional thirteen areas were evaluated as potential Solid Waste Management Units (SWMUs). The Army con-

ducted a facility assessment of each area under the Resource Conservation and Recovery Act (RCRA). The Army also evaluated twenty-nine areas not suspected as SWMUs by conducting reviews of historical aerial photographs and records.

Site specific Remedial Investigations (RI) were conducted for any areas which were believed to have a potential for releases to the environment. Each RI involved collection of soil and water samples, as appropriate, and laboratory analysis samples to assess the type, degree, and extent of contamination. The Basewide RI report summarizes the results of these investigations.

Results from the RI were used to assess if a Remedial Action would be required. For sites requiring a remedial action, the Army prepared a Feasibility Study, which is an in-depth evaluation of plausible remedial action alternatives.

Because contaminants of concern have been found in both soil and groundwater at a number of areas at the depot, human health and ecological risk assessments were conducted for the entire facility to assess the current and future risks to public health and the environment posed by each area and by the site as a whole. The risk assessments were used to determine which of the chemicals found could cause potential adverse effects on human health and the environment if the contaminants are not cleaned up. Both cancer and non-cancer risks to the public were estimated in the human health risk assessment. Potential adverse effects in selected plant and wildlife receptors were evaluated in the ecological risk assessment. Remedial alternatives and cleanup levels for the site were selected to protect human health and the environment.

The Army conducted an Environmental Baseline Survey (EBS) to provide documentation that all facilities and land areas at the depot proposed for transfer do not contain hazardous substances at levels that would pose an unacceptable threat to human health or the environment. The EBS provides an environmental baseline to limit future Army liability and to document the current environmental condition of the property prior to transfer.

In January 1995, the U.S. Army, U.S. EPA, and Cal-EPA joined together in signing the fifth Record of Decision for the depot. This final decision document sets forth the

cleanup methods selected to remedy soil and groundwater contamination basewide. This final ROD amends two previous operable unit RODs, the Oxidation Lagoons ROD, and the Burn Pits ROD.

On March 3, 1995, the depot will officially close and sections of the depot will be transferred to the City of Sacramento and various tenants.

The depot is actively seeking deletion from the NPL list by December 1996. The Army expects that, by that time, all soil contamination will be cleaned up and the groundwater remedy will be fully operational and protective of human health and the environment.

ENVIRONMENTAL TIMELINE

for Sacramento Army Depot

- 1979**
- United States Army Environmental Hygiene Agency (AEHA) initiates Phase I of Sacramento Army Depot Installation Restoration Program (IRP). Phase I Environmental Assessment of the depot IRP is initiated.
 - Records search of disposal practices conducted.
- 1980**
- Phase I of depot IRP continues.
 - Site survey and sampling conducted.
- 1981 to 1995**
- Installation of groundwater monitoring wells.
- 1983**
- Phase I of depot IRP continues and Geohydrologic Study is conducted, which includes groundwater sampling and records search and review of 12 sites.
- 1983 to 1984**
- Depot investigates off-site groundwater contamination.
- 1986**
- Four underground storage tanks are removed from the ground. One tank, Tank 2, is identified as a site with potential contamination.
 - The Technical Review Committee is formed.
 - The initial Community Relations Plan is developed.
 - The Investigation Study, part of the Phase II IRP, is completed to confirm past investigations and to assess remediation alternatives.
- 1987**
- The Soil and Groundwater Assessment, part of the Phase II IRP, is completed.
 - The Proposed Plan to complete IRP is developed.
 - Depot is placed on the U.S. EPA's National Priority List (NPL).
- 1988**
- The Remedial Investigation is completed for groundwater in the southwest portion of SAAD.
 - The Feasibility Study for the treatment of the southwest groundwater plume is completed.
 - Army signs Federal Facility Agreement.
 - Depot Community Relations Plan is updated.
- 1989**
- The Record of Decision for the selected remediation alternative is signed for the southwest groundwater plume.
 - Southpost Groundwater Treatment System is constructed and groundwater remediation started.
 - Seven other sites are identified as top priority for investigation and broken into two categories.
 - (1) *Sites for which enough information exists to initiate Feasibility Studies to develop treatment alternatives:*
Tank 2, Oxidation Lagoons, Burn Pits
 - (2) *Sites for which Remedial Investigations must be completed prior to initiating Feasibility Studies:*
Building 300 Old Burn Pits, Dry Cell Battery Disposal Area, Pesticide Mix Area, Firefighter Training Area

- 1990**
 - Start Field Investigations of the Remedial Investigation sites.
- 1991**
 - The Record of Decision (ROD) to clean up Tank 2 using soil ventilation technology is signed.
- 1992**
 - The proposed cleanup plan for the Oxidation Lagoons is developed.
 - The Feasibility Study for the Burn Pits is completed.
 - The proposed cleanup plan for the Burn Pits is developed.
 - The depot's Community Relations Plan is updated.
 - Additional field investigations were conducted at the Building 300, Burn Pits site.
 - BAT Probe sampling conducted at Parking Lot 3.
- 1993**
 - ROD for the Oxidation Lagoons signed and the Soil Washing Pilot Test begins.
 - Burn Pits ROD is signed.
 - Tank 2 Cleanup complete.
 - Complete field investigation of the Pesticide Mix Area, conclude it requires "No Further Action".
 - Field Investigation conducted at Parking Lot 3 indicates VOCs presence in soil and groundwater.
 - Field Investigation conducted at the Freon site. VOCs (primarily Freon 113) detected.
- 1994**
 - Installation of Air Sparging/Soil Venting pilot program at Parking Lot 3.
 - Pilot program completed at Parking Lot 3.
 - Installation of Air Sparging/Soil Venting pilot program begins at the Freon site.
 - Pilot program completed at Freon.
 - Restoration Advisory Board Established.
- 1994 to 1995**
 - Soil venting remediation at the Burn Pits commenced to remediate VOC's.
 - Initiate Railyard Engine Shed Bio-venting pilot program.
- 1995**
 - Basewide ROD is signed.
 - Environmental Impact Statement (EIS) ROD is signed.
 - First FOST (Finding of Suitability to Transfer) is signed.
 - Proposed installation of Horizontal Groundwater Extraction Wells.
 - Proposed implementation of Basewide Remedial Action.
 - Transfer of clean parcels to the City of Sacramento.
- 1995 to 1996**
 - Remediation of Oxidation Lagoons, Burn Pits, and Groundwater continues.
 - Projected deletion from NPL, December 1996.
 - Final transfer of remaining property.
- 1997 to 2001**
 - Remediation of Groundwater continues.
- 2002**
 - Completion of Groundwater remediation completed.

Defense Environmental Restoration Program Nomination Form



FOSTER WHEELER ENVIRONMENTAL CORPORATION

October 17, 1995

VIA FACSIMILE

Department of the Army
U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland 21010-5401
ATTN: Mike Cast

SUBJECT: FY95 DERP REPORT TO CONGRESS

In response to your request for assistance in the above-referenced matter, dated 27 Sep 1995, I have completed the attached nomination form for the Sacramento Army Depot Activity. This story illustrates the following themes: "fast tract" cleanup, transferring property, and revitalizing communities affected by base closure.

Because only a small caretaker workforce remains at the Depot, I would like to ask that further requests for additional information, supporting documentation or clarification be directed to Mr. John Carrier at Foster Wheeler Environmental Corporation at the address and phone shown on this letterhead.

Sincerely,

Dan Oburn
BRAC Environmental Coordinator
Sacramento Army Depot Activity

John L. Carrier, J.D.
Program Manager
Foster Wheeler Environmental Corporation



FY95 Defense Environmental Restoration Program Annual Report to Congress

Installation or Agency Name and Location: Sacramento Army Depot Activity Sacramento, California	
Synopsis of Short Story and Supporting Recommendation (one to two paragraphs): <p>On 3 March 1995, Sacramento Army Depot was officially closed two years ahead of its BRAC-mandated closure date. Simultaneously, the Packard Bell Computer Center opened on the depot site, signaling the beginning of revitalization of the Sacramento community affected by closure of the Depot. A total of 306 of the Depot's 487 acres were transferred that day to the City of Sacramento under an economic development conveyance. As Sacramento Mayor Joe Serna stated, "We are absolutely thrilled by the speed and teamwork on this conversion. Having Packard Bell up and operating even before the base is turned over to the City of Sacramento has got to be a national benchmark for performance."</p> <p>These events were made possible through a combination of several actions: accelerated fast-track cleanup of contamination from past business practices at this former industrial site; a parcelized approach to completing Environmental Baseline Surveys (EBS) and Findings of Suitability to Transfer (FOST) allowing focus to be placed on those parcels that offered the most immediate potential for reuse; and new legislation permitting economic development conveyance of real estate to local redevelopment authorities for the purpose of jobs creation. As a result, when the City of Sacramento successfully negotiated an incentive package to bring Packard Bell to the site, the Army was able to lease several parcels to the City to secure Packard Bell's interest, and then accelerate the transfer of 306 of the 371 acres requested by the City under an economic development conveyance. The remaining 65 acres will be transferred as soon as environmental remediation efforts are far enough along to designate them as suitable for transfer. Packard Bell is now in full production of personal computers on the former depot site with over 5,000 employees (including between 300 and 400 jobs that had previously been performed overseas)—more than replacing the 3,000 jobs lost from Depot closure. Constant communication, close coordination and teamwork from the staffs at the Depot, Army agencies and other federal, state and local regulators and agencies, the City of Sacramento, and Packard Bell Electronics have made the closure of the Sacramento Army Depot a major reuse success.</p>	
Installation or Agency Point of Contact: Dan Oburn, Sacramento Army Depot Activity	
Title: BRAC Environmental Coordinator (BEC)	
Telephone: (916) 557-7936	Fax: (916) 557-7937
Is this short story applicable to or representative of actions that have taken place at any other installations? [If yes, identify installation(s)] <p>While Sacramento Army Depot was a relatively small, single purpose industrial facility, and not everyone will find a Packard Bell Electronics at their doorstep, the basic principles used to accelerate cleanup and lay the groundwork to take advantage of an emerging reuse opportunity are applicable at other closure sites.</p>	
Are newspaper articles, publications, fact sheets, or other reference materials available? (List and briefly describe if necessary.) <ul style="list-style-type: none"> • <i>Vacaville Reporter</i>, "Sacramento depot a 'model' of success," 28 March 1995. • <i>Sacramento Bee</i>, "Depot a 'Win-Win' Story for all Parties Involved," 3 March 1995. • <i>Sacramento Bee</i>, "Taps played for Army Depot as Packard Bell Launches New Era," 4 March 1995. • <i>Sacramento Bee</i>, "Five Agencies Agree on Plan to Clean Depot's Groundwater," 9 February 1995. • <i>Sacramento Bee</i>, "Depot's Conversion Sets Feverish Pace," 3 February 1995. • Video Tape "Closing with Dignity," Produced by U.S. Army Corps of Engineers, Sacramento District, March 1995. Covers entire ceremony including closure of the depot, transfer of property, and opening of Packard Bell Center, along with speeches from federal, state and local dignitaries. • Depot Closure News Clips (Video Clips of Televised News Coverage of Depot Closure Ceremony), 3 March 1995. 	
Are relevant photographs available? (If yes, briefly describe and state if an original is available for reproduction.) Yes. Original photographs of the base closing ceremony are available. Also, original "before and after" pictures of the depot's change from an Army installation to Packard Bell's world headquarters are available.	
Are other supporting graphics available? (If yes, briefly describe graphic and state if available electronically and in what software format it exists.) Yes. Overheads used for briefings are available in powerpoint.	

Are there any notable and relevant quotes from state or federal officials, community members, public interest groups, or others? Yes—the following quotes have appeared in various editions of the *Sacramento Bee*:

- Mark Wagner, Special Assistant to the Assistant Secretary of Defense for Economic Security: “The City of Sacramento is gaining jobs and a revitalized economy. This is an outstanding example of successful reuse.”
- According to Army Undersecretary Joe R. Reeder, “The closure and reuse of the Sacramento Army Depot is a tremendous success story. It’s a model of successful reuse.”
- “Everything was fast-tracked,” said Ben Williams, who coordinates California military base closures for the Governor’s Office. “People dropped everything else and burned the midnight oil to make things happen.”
- Lieutenant Colonel Todd Blose, the 34th and last commander of the Army Depot, characterized the base’s environmental cleanup efforts as “nothing less than a miracle.”
- Major General Dennis Benchoff, chief of the Army’s Industrial Operations Command, described the Depot as “a shining example of what can be accomplished.”
- Sacramento City Councilman Darrell Steinberg said the Packard Bell deal “is being looked at as a national model. The positive spinoffs have just begun.” He further stated that the deal and property transfer were “a win-win situation for everyone.”

Has there been or is there the potential for any negative publicity surrounding this or any other environmental issue at the installation? (If yes, briefly explain.) No. Public response to the cleanup efforts and reuse of the property has been positive. The Restoration Advisory Board (RAB) is involved with the restoration program and supportive of its goals.

Is there an emerging theme from this short story? (If yes, please identify.)

Successful reuse of closing military installations is an attainable goal and is achievable on a timely basis through the use of the accelerated fast-track cleanup process and close cooperation and coordination among the Army, state and federal regulators, and local reuse interests.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENVIRONMENTAL CENTER
ABERDEEN PROVING GROUND, MARYLAND 21010-5401



SFIM-AEC-PAO

27 SEP 1995

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Request Assistance for FY95 Defense Environmental Restoration Program (DERP) Report to Congress

1. In response to guidance from the Office of the Assistant Deputy Under Secretary of Defense (Environmental Cleanup) (OADUSD(CL)), we are requesting your assistance in an effort to update the FY95 DERP Report to Congress.
2. The FY95 report will be published in two volumes. Volume I will contain short stories that illustrate the significance of the Defense Department's environmental restoration program. OADUSD(CL) is not just seeking "good news" but information that will demonstrate the importance and effectiveness of the Defense Department's environmental restoration program to members of Congress. Volume II will contain installation narratives and data tables which will be coordinated with your Base Realignment and Closure (BRAC) and Environmental Offices shortly.
3. We ask that you provide the enclosed nomination form to the appropriate installation environmental staff within your command and to your BRAC office for non-restoration themes. Each completed nomination form should include a synopsis of an environmental restoration short story that would illustrate a significant aspect of the Army's restoration program. Themes used for the DERP Report to Congress in the past have included:
 - "Fast Track" Cleanup
 - Taking Interim Actions to Reduce Risk to Human Health and the Environment
 - Improving Site Management and Site Characterization
 - Developing and Implementing Generic (Presumptive) Remedies
 - Identifying, Developing and Demonstrating Innovative Environmental Technologies

SFIM-AEC-PAO

27 SEP 1995

SUBJECT: Request Assistance for FY95 Defense Environmental
Restoration Program (DERP) Report to Congress

- Completing Substantial and Significant Final Cleanups
- Transferring Property
- Revitalizing Communities Affected by Base Closure
- Partnering During the Cleanup Process
- BRAC Cleanup Teams at Work
- Improving Decision Making
- Communicating Risk
- Ensuring Environmental Justice
- Providing Opportunities for Small Disadvantaged Businesses

4. The one- or two-paragraph nomination synopses need not be limited to these themes. One of the goals for the FY 95 Report is to uncover and illustrate new and emerging themes that relate to today's political climate. One important theme, for example, is the use of relative risk as a DOD model for setting funding priorities. Another is the fact that a larger percentage of funding is now being spent for actual cleanup versus environmental investigations. The FY 95 Report should also contain short stories that illustrate how the Army is using its limited resources wisely to achieve its restoration goals in a cost-effective way. All the short stories used to illustrate these themes should concern activities that took place in fiscal 1995.

5. When determining how short stories fit into themes that are appropriate for the FY 95 report, the following questions may be pertinent:

- How was the action initiated?
- How did the process actually work?
- What process improvements were made?
- What obstacles had to be overcome?
- How was the public involved?
- How did, or will, the action result in accelerated cleanup?
- What are the real or potential cost savings?
- What lessons were learned?
- What limitations or obstacles continue to exist?
- How have the lessons learned or information been transferred to other installations or agencies?
- What is the relationship of the accelerated cleanup themes to the other major themes of partnering and community involvement?

SFIM-AEC-PAO

27 SEP 1995

SUBJECT: Request Assistance for FY95 Defense Environmental
Restoration Program (DERP) Report to Congress

In addition to the synopses, nominations should also contain a persuasive recommendation as to why they warrant inclusion in the FY 95 report. Nominations will also need to include supporting materials and documents that relate to installation restoration: including newspaper articles, fact sheets, notable and relevant quotes from prominent persons, and photographs and graphic art, if possible. We request that you return nomination forms and supporting materials to this Office by close of business on 17 Oct 95.

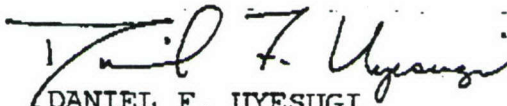
6. The OADUSD(CL) will review the nomination packages and select the best submissions for the FY 95 report. Although the nomination packages do not need to contain completed short stories, these may also be submitted. That is encouraged, if time permits.

7. For more information concerning this effort, the U.S. Army Environmental Center's Public Affairs Office point of contact is Mr. Mike Cast. Nomination packages can be forwarded to him at the following address:

Commander
U.S. Army Environmental Center
ATTN: SFIM-AEC-PA (Mr. Mike Cast)
Beal Road, Building E-4460
Aberdeen Proving Ground, MD 21010-5401.

Mr. Cast's telephone extension is DSN 584-1272/2556 or (410) 671-1272/2556 (FAX 584-1693).

Encl


DANIEL F. UYESUGI
Colonel, CM
Commanding

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(CONT)

Depot's conversion sets feverish pace

By Clint Swett
Bee Staff Writer

Things move quickly in the computer industry, and Packard Bell Electronics appears to be no exception.

Just one month after moving into the Sacramento Army Depot and another month before it takes legal possession of the facility, the manufacturer of personal computers has about 500 employees working at a pace to crank out 50,000 computers per month.

The speed of Packard Bell's start-up

and the broad use it plans to make of the Army Depot facilities is prompting officials to point to the site as a model for converting surplus military facilities to civilian use.

"If you think about it, this base is fully converted even before it's turned over by the military," said Michael Picker, chief of staff for Mayor Joe Serna Jr. "I don't think there are any other bases that have moved as quickly to provide civilian jobs even before it's turned over."

On Tuesday, Packard Bell gave its first public tours of the sprawling facili-

ty since the company began operations there Jan. 5. Several hundred yards away from the temporary production line, where most of Packard Bell's 500 employees work, about 200 construction workers have begun turning quarter-mile-long warehouses into modern manufacturing facilities.

Two shifts of workers are laying down floor tile, installing heating and air conditioning ducts, wiring new light fixtures and preparing the area for 4½

Please see PACKARD, page F3

SACRAMENTO, CALIF. —

3 FEB 1984

Packard: Sales soaring

Continued from page F1

miles of conveyor belts that will help convert separate pieces of electronic gear into fully assembled computers.

When that work is completed sometime in April, the company plans to have 2,000 people working at the site—which will be designated as the company world headquarters. As many as 2,500 people could be on the payroll by June.

"By June we'll be the largest computer manufacturing facility in the United States," said Roger Norby, Packard Bell's senior vice president of manufacturing.

Packard Bell appears to need that capacity in its new position as the No. 3 computer maker in the United States—behind Compaq and Apple. By selling through mass retailers such as Sears, Wal-Mart, Computer City and Incredible Universe, Packard Bell shipped 2.48 million computers last year, up 113 percent from 1993. Norby said much of the gain was fueled by strong demand for home computers, a trend that he said is likely to continue through the decade.

If anticipated demand meets expectations, he said the firm likely will hire more than the 3,000 workers projected when a tentative deal among Packard Bell, the Pentagon and Sacramento officials was announced last fall.

The Army expects to relinquish control of the Depot on March 3. An elaborate ceremony is planned when the site is turned over to the company, which will rename it Packard Bell Center.

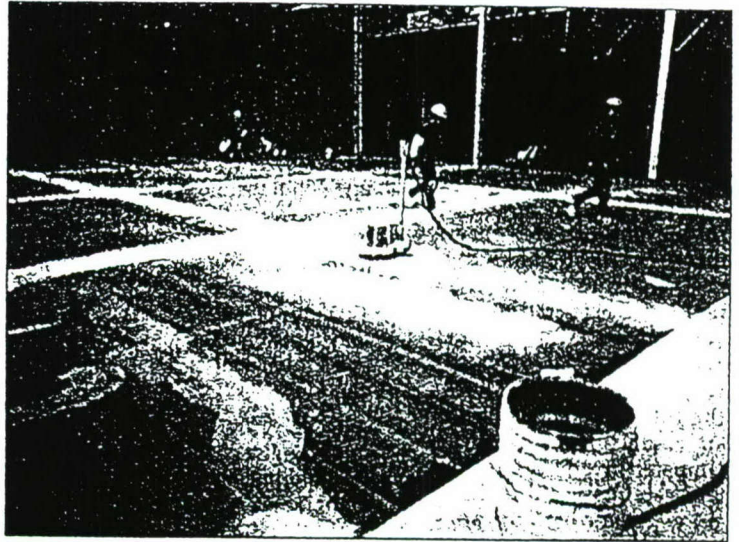
More than 17,000 people submitted resumes for jobs at the Sacramento site, according to Norby, who pronounced the quality of the work force very exciting.

The company will occupy about 380 of the 480 acres of Army Depot property, Norby said, giving it plenty of room for expansion if market conditions warrant it.

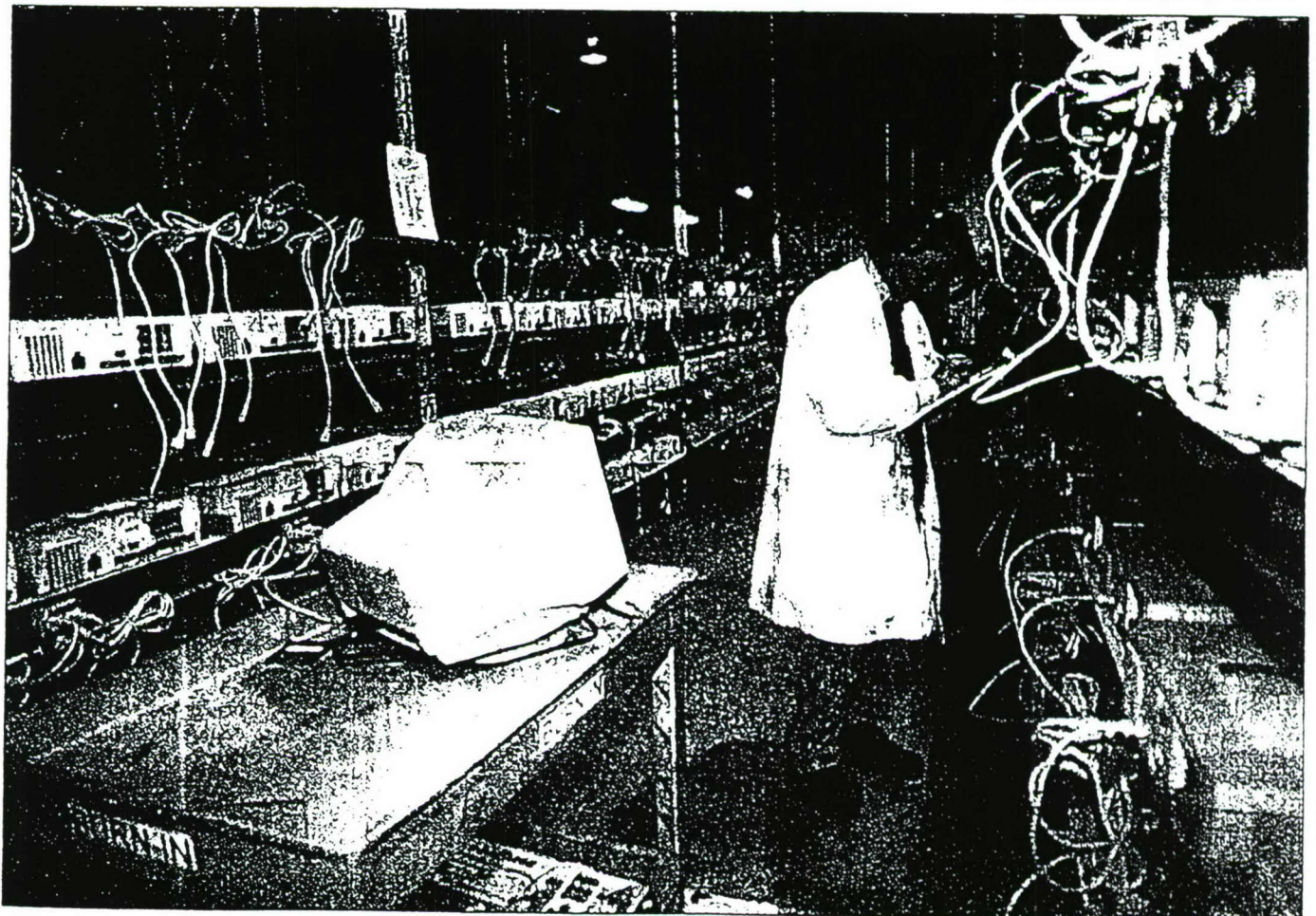
Along with computer assembly, the company said it will build mother boards, which house most of the chips in a computer. At the depot, Packard Bell said it is buying \$11 million worth of board-making machinery from Fujitsu and moving the operation to Sacramento from overseas.

“
By June we'll be the largest
computer manufacturing facility in
the United States.
”

Roger Norby
Packard Bell's senior vice president of manufacturing



Workers prepare flooring for the laying of tiles at the new Packard Bell buildings on the former Sacramento Army Depot site.



Charles Hurd tests Packard Bell computer system.

Boo Lard and Chen

Five agencies agree on plan to clean depot's groundwater

By Steve Gibson
Bee Staff Writer

In what was billed as a first in the nation, a final groundwater cleanup pact for the Sacramento Army Depot has been signed, state officials said Wednesday.

When the contamination is removed by the end of 1996, between \$60 million and \$70 million will have been spent on the effort, said Allan Hirsch of the Department of State Toxics Control.

Hirsch said the 485-acre base in southeast Sacramento is expected to be pulled off the federal Superfund list of contaminated sites next year, making it a first for military installations being closed by the Pentagon.

"The entire cleanup should be done within two years," said Beverly Swift, one of a handful of employees remaining at the depot, which is being converted by Packard Bell into a personal computer manufacturing plant.

The cleanup plan was the last step to be

completed before the Army can officially turn the depot site over to the city of Sacramento. The city will then lease the land to Packard Bell.

The depot, which once employed nearly 3,000 people, was targeted for closure in 1991. The Army plans a March 3 ceremony to formally relinquish control.

The toxic-cleanup plan was signed by representatives of the Army, the federal Environmental Protection Agency, Cal-EPA, the state Department of Toxics Substances Control and the Central Valley Regional Water Quality Control Board.

Swift noted that when measured against toxic contamination on the other side of town at McClellan Air Force Base, the Army Depot's problem is minor.

At McClellan, officials estimate it will cost another \$1.3 billion - using emerging technologies - over the next two decades to clean up the toxic mess there. Estimates to get it clean by 2000 using existing technology range to \$10 billion.

OFFICE OF THE COMMANDER
Sacramento Army Depot
Sacramento, California 95813-5010

09 FEB 1995



The Sacramento Bee

Two bases a sharp contrast in path to civilian use

By Deb Kollars
Bee Staff Writer

As a military man — more to the point, as a mince-no-words get-it-done ex-Green Beret — Roy A. Murray Jr. has had it with the county of Sacramento.

County leaders, in turn, are fed up with Murray and his boss, the United States Air Force.

Thanks to their ongoing cold war, Sacramento's plans to turn Mather Air Force Base into a shining post-Cold War center of aviation, commerce and housing are sputtering to a halt.

For six years, the two sides have struggled over reuse of the air base, which closed in 1993. In recent months, those efforts have been marked by increasing mistrust, verbal assaults and aggressive acts to outmaneuver one another.

The conflicts involve the site's two biggest components — a neighborhood of 1,271 homes and the sprawling airfield that is supposed to become the money-maker of the reborn base. In particular, both sides are feuding over the price of the housing and who should pay to maintain electricity, gas and phone lines at the base.

While the battles drag on, Mather continues to stand as a vast and mostly empty piece of real estate in a county hungry for new development.

"It's one roadblock after another," said a disgruntled Don Nielsen, chief executive officer of the Cordova Chamber of Commerce. Along with county supervisors, he is concerned about potential air cargo tenants who may cancel plans to relocate to Mather. "To have this travesty continue is an out-

Continued from page A1

rage." According to Murray, a West Point graduate and former Special Forces officer who manages the base for the Air Force, he and his bosses are only trying to follow the law and get the best deal for taxpayers. County bureaucrats, he said, are to blame for the standoff.

"I've fought North Vietnamese who were easier to get along with," said Murray, a trim and compact civilian man with ramrod straight posture and an office decorated with military memorabilia. "Most of these people haven't done anything in their lives. They haven't had to protect someone, to put their lives in danger. Until you risk your life for something, you don't have a clue."

Such fighting words have done little to endear Murray and the Air Force to the county administrators working on the Mather deal. Like the Air Force, the county is trying to transform the base with as little cost to taxpayers as possible.

Robert B. Leonard is Sacramento County's director of military base conversion. As far as he is concerned, it is a stubborn and entrenched Air Force base-closing bureaucracy that is blocking progress on Mather.

Leonard is a tall and earnest man, intensely optimistic about the future of the base. Mather maps line the walls of his office. Wherever he goes, he carries a spiral notebook to record Mather matters. Leonard is reluctant to complain too loudly about his nemesis, but these days words like "childish" and "antagonistic" tend to slip out.

"We're not blundering bureaucrats! We're not!" Leonard said. "We're trying to show leadership on this and we keep running into barriers."

From the start, local leaders knew Mather would be a challenge to redevelop.

The base, which lies south of U.S. 50 in Rancho Cordova, opened in 1918 in the last days of World War I. Between 1941 and 1993, more than 35,000 men and women trained as navigators and electronic warfare officers at the base. Slated for closure in 1988, the site covers 5,715 acres — 22 times the size of downtown Sacramento.

Over the years, the county and the Air Force have worked through many sticky issues in transforming Mather. Last year, the county took over Mather Golf Course and opened it to the public. Plans also are moving forward to provide transitional housing for homeless people. And later this year, county residents will be able to bike and picnic at a regional county park being developed on the site.

But two big stumbling blocks remain — developing the airfield and refurbishing the housing.

The county wants to take over the airfield and lease it to private air cargo firms and other light industrial enterprises.

The Air Force is willing to donate the 2,800-acre airfield to the county without charge. But the transaction is being held up because the two sides cannot agree on who should pay for repairing and maintaining the antiquated utility systems.

"The Air Force is disposing of the property. There is no point in us paying to improve it," Murray said. "We're willing to give away assets, not maintain them. Our job is to close the gates."

Leonard and other county administrators believe the Air Force and county should share the utility maintenance costs, at least on an interim basis. The two sides discussed the matter again this week, and may be moving closer to a compromise.

"Yes the Air Force is donating the land," he said. "But it comes with a huge liability. They need to be a partner in this transition."

Southeast of the airfield lies the other major obstacle — an aging collection of houses, duplexes and fourplexes that the Sacramento Housing and Redevelopment Agency wants to refurbish and sell to lower-income people.

For two years, the Air Force and county have wrangled over the sale price of the deteriorated homes. The Air Force initially asked \$25 million, and later dropped to \$10 million. The county has offered \$3.5 million — a price suggested by an appraisal jointly funded by the two sides last year.

Over the holidays, the negotiations crumbled. One month later, the Air Force infuriated the county by putting the property up for

public sale — something it had warned it would do if talks bogged down, Murray said. The county then angered the Air Force by issuing a warning to potential buyers that the homes come saddled with problems.

"We really feel scorned by this," Leonard said of the Air Force's public sale, slated for April 4.

Across town at the base, Murray fumed, charging the county was trying to torpedo the Air Force's efforts to sell the property.

"I looked at that as neener, neener, neener, never negotiated at all. I'm not dealing with honorable people any more."

At this point, the county is calling in the big guns, namely local elected representatives such as Rep. Richard Pombo, R-Tracy, and Robert Matsui, D-Sacramento, to help bring about a truce.

Matsui said he plans to encourage both sides, but especially the Air Force, to "stop the gridlock."

This is not the first time he and other top leaders have intervened in the war over Mather. U.S. Sen. Barbara Boxer, for example, wrote to Air Force Secretary Sheila E. Widnall on Dec. 30, urging her to help resolve the "tortuous" negotiations over the base houses.

"It's like a bad marriage," Matsui said. "The problem is that the Air Force still wants to make a profit and that is not appropriate."

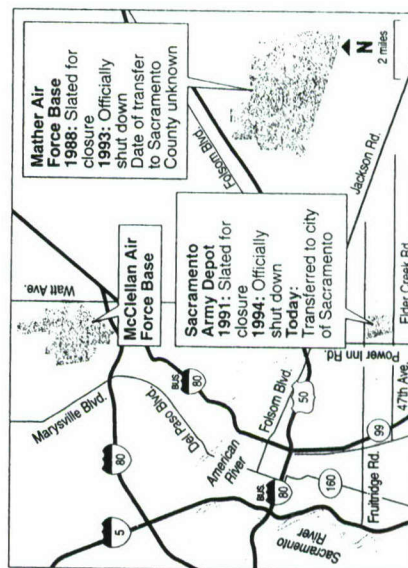
As the battles continue, Mather sits locked in a time warp, its wartime mission over, its new peacetime life on hold.

From their opposing camps, Leonard and Murray both remain optimistic they will eventually work out their differences.

"Mather is one of the first bases to go through this process nationally," Leonard said. "It holds great potential for our community. People expect an overnight success, but we always knew it would come more slowly."

As for Murray, the struggles are all in a day's work. "It's like being a commander," he explained. "When you command troops, are there a lot of headaches? Yes. Are there a lot of rewards? Of course."

Bee staff writer Loretta Kalb contributed to this report.



Bee graphic/R.L. Rebach

By Deb Kollars
Bee Staff Writer

It sat in a barren corner of town. The place was covered with concrete and warehouses. Even the name of the blue-ribbon panel assigned to it was a snooze — the Sacramento Army Depot Economic Adjustment Reuse Commission.

This morning, the Army will hand over the defunct depot to the city of Sacramento, which will then lease the property to Packard Bell, the third-

Please see DEPOT, page A25

The firm plans to transform the old base into a bustling high-tech hub of commerce and employment. Already, gleaming new computers are being assembled, tested and packaged. Packard Bell expects to employ 3,000 women and men by year's end. Within three years, as many as 10,000 could work there — far more than the Army Depot ever had.

"The closure and reuse of Sacramento Army Depot is a tremendous success story," Army Undersecretary Joe R. Reeder said. "It's a model of successful reuse."

The 485-acre site lies in a remote industrial corner of the city at Fruitridge and Power Inn roads. For years, the depot was an important, if unflashy, employer in Sacramento. As recently as five years ago, 3,000 people worked there repairing and maintaining electronic and night-vision equipment.

"It definitely wasn't a sexy process," recalled City Councilman Darrell Steinberg, who represents the area. "I don't think anyone in the beginning thought it was going to result in such a success. This whole part of town has been a forgotten area."

Lots of luck and an unprecedented level of cooperation between various government entities brought about the final deal, said Ben Williams, who coordinates California military base closures for the Governor's Office.

Packard Bell first began looking for a new home in Southern California in 1993. The firm was spread out at seven sites around Los Angeles and wanted to consolidate. Then last January, the Northridge earthquake hit, severely damaging several facilities. The company's search intensified and expanded to Portland, Salt Lake City and Boston.

Packard Bell liked the depot because it was outside earthquake territory and had big sturdy buildings that could easily be converted for making computers. The city liked Packard Bell because, in one fell swoop, it could replace the 3,000 jobs lost when the depot closed. The Army liked the deal because it could point to Sacramento's happy ending when other communities complained about base closures. And the Governor's Office was pleased because it would keep jobs within state borders.

Between July and October, city, state and federal agencies scrambled to make the deal happen.

The city assembled a \$26 million package of loans for moving expenses and property improvements — the largest such incentive offer in city history — to encourage Packard Bell to locate here. And the Army rushed to transfer the title of the property to the city.

In a ceremony this morning, the Army will turn over 367 acres of the base to the city. The remaining 118 acres have been set aside for Army and Navy reserve centers and other uses.

The Sacramento Army Depot is a relatively small, single-use piece of property. It doesn't have airfields, golf courses, housing or other components that have complicated efforts at Mather Air Force Base and other installations. In addition, toxic cleanup at the depot is far ahead of schedule, vastly easing the transition.

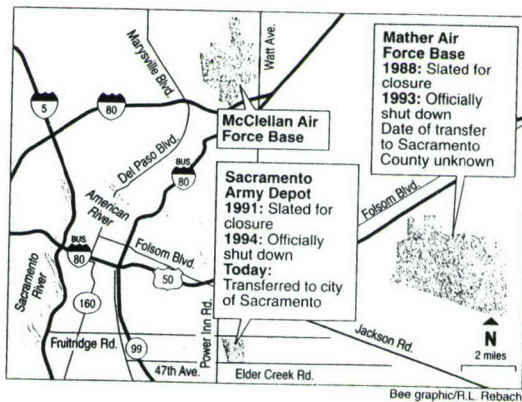
"The number of companies prepared to move thousands of employees onto empty military bases are few and far between," Wright cautioned. "This was a very fortunate outcome."

"I came and said 'This is the place,'" he recalled. "They had a high-quality work force, close proximity to a major airport and it was earthquake-proof."

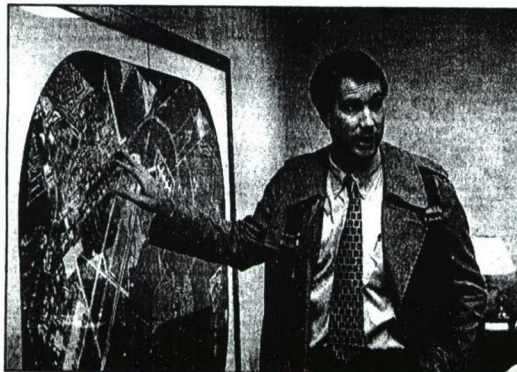
Meanwhile, the remaining 19 employees at the base are packing for new assignments.

Lt. Col Todd Blose, who has managed the vacant depot for the last two years, said his goal was to "close with dignity." And in his mind, that has happened.

Blose's next assignment will be at the Pentagon, where he will put his experiences at the Sacramento Army Depot to work assisting other bases as they, too, close down.



Bee graphic/R.L. Rebacci



Roy A. Murray Jr., above, who's heading Mather conversion for the Air Force, says of his relations with the county, "I'm not dealing with honorable people any more." Robert B. Leonard, at left, county director of base conversion, says of the Air Force, "They need to be a partner in this translation."

Bee/Skip Shuman

B

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Taps played for Army Depot as Packard Bell launches new era

By Steve Gibson
Bee Staff Writer

The Sacramento Army Depot was turned over to the city of Sacramento for use as a computer plant Friday in a bittersweet ceremony that one speaker described as "a little bit like a funeral and a little bit like a baptism."

"We are looking forward to this new beginning," said the speaker, state Sen. Patrick Johnston, D-Stockton, as the Army lowered the flag and formally relinquished control of the 480-acre site in southeast Sacramento.

Packard Bell Electronics, which is leasing the base from the city, began making personal computers in remodeled depot buildings two months ago through a Pentagon-approved plan to speed up conversion of the base to civilian use.

By year's end, the firm expects to have 3,000 employees on the payroll — the same number as worked at the Army depot before it was targeted for closure.

More than a dozen speakers addressed the estimated 1,200 people who gathered in a cavernous warehouse for the ceremony that included retired Lt. Col. John Hinckley, 88, one of the original officers assigned to the depot.

"It's kind of sad to see this place become a victim of the closure process," Hinckley said before the ceremony. "But it's nice for Sacramento that Packard Bell is locating here."

The depot, initially called the Sacramento Signal Depot, opened during World War II in a rented warehouse near downtown Sacramento. The Army began construction of what is now Packard Bell Center in 1943.

Mayor Joe Serna Jr. hailed the Army depot conversion as the first economic development conveyance under President Clinton's five-part plan for base reuse.

City Councilman Darrell Steinberg, whose district includes the site, said the Packard Bell deal "is being

looked at as a national model. The positive spinoffs have just begun."

Maj. Gen. Dennis Benchoff, chief of the Army's Industrial Operations Command, characterized it as "a shining example of what can be accomplished. There is life after base closure."

As part of the ceremonies, Serna and Packard Bell President Benny Alagem wielded a pair of oversized scissors to cut a ceremonial ribbon as an Army band performed the "Star Wars" theme.

Then each of them gave a speech, Serna hailing the conversion as a "historic event" and Alagem praising local, state and federal officials for their prompt response to his company's interest in relocating at the Army Depot.

"It's created a winner for everyone," Alagem said. "It shows that when you set your mind to a common goal and work together, you can achieve it."

Lt. Col. Todd Blöse, the 34th and last commander

Please see DEPOT, page B6

Depot: U.S., state OK
cleanup plan for toxics

Continued from page B1
of the Army Depot, characterized the base's groundwater cleanup efforts as "nothing less than a miracle."

Blose noted that a toxic cleanup plan has been approved by federal and state agencies, the first such plan covering an entire closed military base.

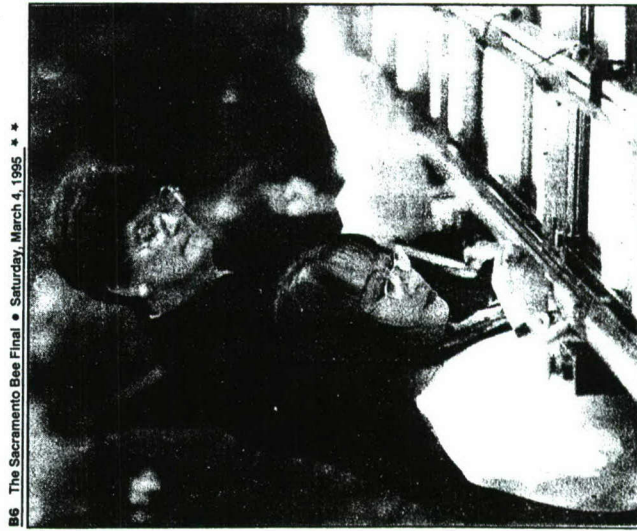
A spokesman for the state Department of Toxic Substances

Control said soil contamination cleanup should be finished in two years and water contamination cleanup in 10 years at a total cost of more than \$60 million.

"The cleanup work should not interfere with anything Packard Bell is doing," said Allan Hirsch, the state spokesman. "Packard Bell is in the north part of the base. Most of the contamination is in the south part."



Bee/Anne Chadwick Williams
Retired Lt. Col. John Hinckley passes off the American flag, later given to Packard Bell.



Bee/Anne Chadwick Williams
Packard Bell production operator Sunhee Min places connectors on a circuit board during a demonstration for visitors Friday.

There's a new major in town

In brief Fort Ord will become a college campus in a success story from base closure effort.

By Catalina Ortiz
Associated Press Writer

At Fort Ord, a scenic military base where the Army once reigned supreme, the most oft-heard question may soon be: "What's your major?"

The heart of Fort Ord is being converted into the new California State University at Monterey Bay.

An Army base since 1917, Fort Ord was a basic training camp during the Vietnam War, and then became home to 11,000 members of the 7th Light Infantry Division.

The division pulled out in 1993, and about 700 students will replace them when classes start this fall. Eventually, thousands of students will pursue degrees, many specializing in marine and environmental sciences.

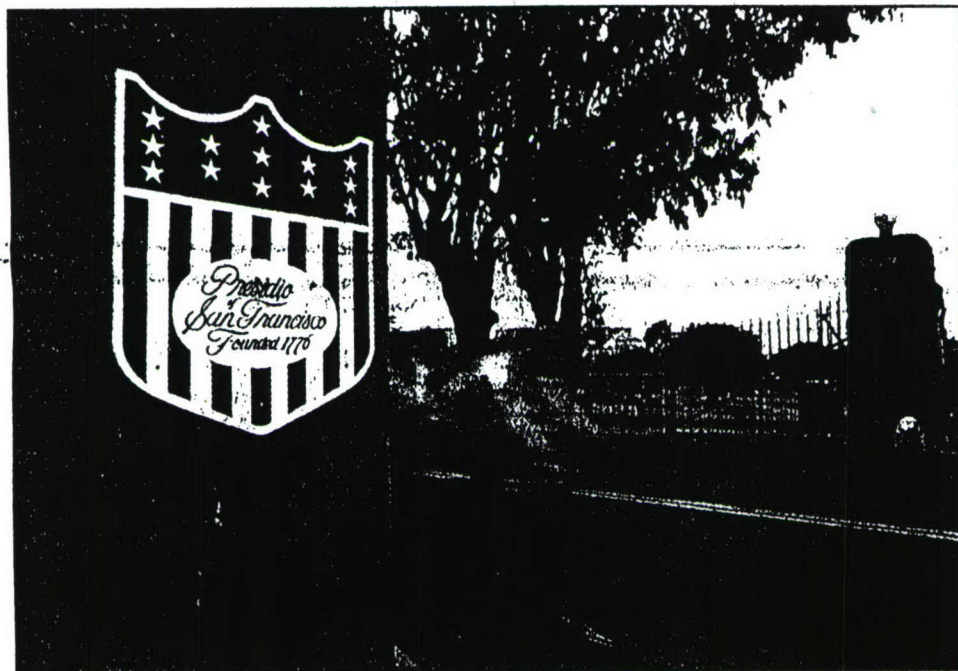
California has been hardest hit by the four rounds of military base closures since 1988, losing two dozen bases and more than 56,000 military jobs. Fort Ord was designated for closure in 1991.

The troops' departure left a \$500 million a year hole in the Monterey Peninsula's economy.

Still, Fort Ord is one of the few bright spots so far in finding new uses for former bases.

The CSU campus is taking 1,300 of the 28,000 acres. A former housing complex for officers on the base has become a public resort. And the Univer-

■ See New major, Back Page



Associated Press

The Presidio in San Francisco has been one of the minor successes in the series of base closings.

Sacramento depot a 'model' of success

By Ann Bancroft
Associated Press Writer

If every base closed as smoothly as the Sacramento Army Depot, cities wouldn't have to worry about the impacts of huge military cutbacks.

At the depot, where 3,300 civilians once repaired sophisticated electronic and night-vision equipment, Packard Bell workers now assemble personal computers.

The nation's third largest com-

puter maker hopes to employ 3,000 there by the end of this year, and up to 10,000 within three years.

Cleanup of toxic contamination, a problem at virtually every military base, is moving at record speed. Regulators predict the depot will be the first in the nation to be removed from the national Superfund list.

Army Undersecretary Joe R. Reeder called the depot a "model of successful reuse."



At an emotional ceremony March 3, taps were played as the Army Depot was officially trans-

■ See Sacramento, Back Page

Sacramento depot ...

■ Continued from Page 1A

ferred to the city of Sacramento, which is leasing the property to Packard Bell.

Things didn't look so promising in 1991, when the depot first showed up on the dreaded base closure list. As employee cutbacks began, Sacramento officials looked for possible uses for the drab, warehouse-dotted property in a depressed area.

A state prison seemed the likeliest prospect, but funding never materialized. Foodlink, a supplier of donations to food banks, took over 540,000 square feet of warehouse space, but brought few jobs.

A combination of disaster, serendipity and political scrambling finally made the difference.

Packard Bell wanted to leave Southern California after the 1994 Northridge earthquake damaged many of its facilities. Salt Lake City promised the company \$6 million to move to Utah, and other cities also offered enticements.

Sacramento officials, eager to woo high-tech manufacturing jobs, took a financial gamble. In the final days of the 1994 Legislature, the city helped push through a bill designating the depot an Enterprise Zone, qualifying Packard Bell for \$5 million in tax breaks if it hired the unemployed from blighted areas. The city also loaned up to \$26 million for moving and renovation.

The lease was signed even before the base was officially conveyed from the Army to Sacramento.

Packard Bell will repay over 12 years the city's loan of \$17 million for depot improvements. The company has five years to repay up to \$9 million in moving costs. After ten years, Packard Bell can buy the site for \$6.8 million.

"We know it's a risk, but we think it's an important step and a prudent risk," Sacramento Mayor Joe Serna, Jr. said.

But Ben Williams, Gov. Pete Wilson's expert on base closures, cautioned that other cities should not expect such quick results.

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CURRENTS

Army Depot: It's called a model for toxic cleanup

By LEANDER KAHNEY

The Sacramento Army Depot, identified in the mid-1980s as one of the most polluted sites in the nation, has been hailed as a "model" of how to clean up a polluted military base.

For nearly 30 years the Army dumped toxic trash and chemicals in its own back yard — oil grease, acids, solvents, pesticides, heavy metals and even radioactive radium paint. All of which percolated into the earth, contaminating soil and a large portion of the area's groundwater.

But five years ago the Army began a program that is considered the most successful military base cleanup to date. The \$1-million-dollar project has set the



Dan Oburn

***INSIDE:** A wide variety of civilian uses is proposed for the Sacramento Army Depot. See Page 12.

depot up to be the first Department of Defense establishment to be taken off the federal Environmental Protection Agency's Superfund list — a catalog of the most toxic sites in the nation, military and otherwise.

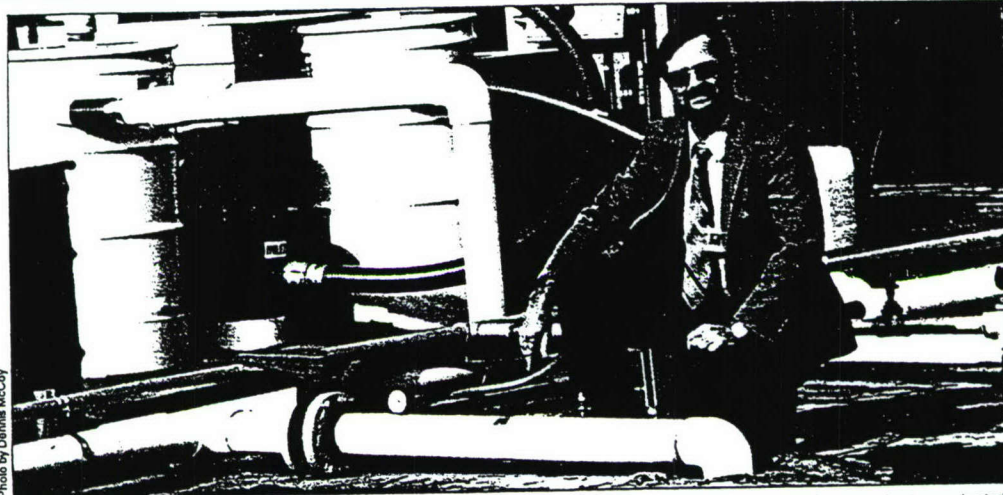
"When other Superfund owners have been whining, foot-dragging and litigating, the Army went ahead and cleaned it up," said Duane Peterson, president of the Sacramento Valley Toxics Campaign, a local nonprofit pressure group.

The depot's effort, added a regulator from state government, "shows it can be done."

State government and depot officials agree that part of the success of the effort rests on their cooperation with one another. Some even talk of the heady prospect of leaving the grounds in a cleaner condition than when the Army set up shop there 48 years ago.

The cleanup push has had one key

Please turn to page 19



Dan Oburn with the "air sparging" apparatus: "We were looking for a fast way to treat groundwater"

Army Depot hailed as a model cleanup

Continued from page 1

advantage to start with: It was not as mucked up as Mather or McClellan Air Force bases. Nonetheless, the price tag is sizable. So far, said Dan Oburn, the Army Depot's environmental coordinator, \$47 million has been spent on the job. More than \$20 million more is likely to be shelled out before the task is completed.

In January, a pilot study of "air sparging," a new technique to purify both soil and groundwater, will be completed. If the technology is a success, it could shave fully five years off the groundwater cleanup calendar. Otherwise, groundwater cleanup likely will not be finished until after the close of the decade.

Closing in on closure

Experts at the depot, however, hope to have polished off the lion's share of the cleanup before the base's scheduled closure in July 1997. A pilot water-purifying project could, if successful, bring that date even closer. Base managers, moreover, are so confident of the efficiency of the overall program, they boast that the area could be as pristine as it was before the depot was established.

Founded in 1945 but now gradually winding down, for more than 40 years the depot has been a repair center for high-tech military hardware. Over the years, thousands of pounds of toxins have been dumped at nine separate sites across the 485-acre base.

Even though the depot is sandwiched between large industrial complexes at Fruitridge and Power Inn roads, it is home to a variety of wildlife. Living amid the complex of offices and warehouses are jackrabbits, foxes and fairy shrimp (which may soon be listed as an endangered species, its natural habitats threatened by pollution), as well as the occasional owl and coyote.

This aspect of the base is proudly pointed out to the hundreds of visitors every year who come to see how the depot is cleaning up its act. Visitors to the base range from top military brass to Australian environmental businessmen. But most importantly, other Superfund project managers are taking a keen interest in the Army Depot's efficient cleanup programs.

"(The Army Depot) is a model of responsible environmental protection that other Superfund owners should be looking into," said Peterson of the Toxics Campaign. "I'd never thought we'd be saying that about the Army, but there we have it."

Arduous ordeal of details

Of the nine original contamination sites, three have been successfully treated.

The regimen is long and arduous, explained Oburn, the depot's environmental coordinator. To begin with, many months can be spent simply investigating the sources and extent of contamination. This was especially true at the Army Depot, which underwent a number of changes over the years. To ensure that all sources of contamination had been uncovered, engineers used a wide variety of investigative techniques, including studying old photographs and interviewing old soldiers. More than 120 monitoring wells have been sunk around the base to determine the extent of groundwater pollution.

When a clear picture of the hot spots had been established,

detailed cleanup plans had to be drafted and approved before the work could start.

The main reason for the Army's success is that the contamination was relatively limited, said Allan Hirsch, a spokesman for the state Department of Toxic Substance Control, one of three oversight agencies. "It had just a fraction of the problems that other local military bases face," he said. "But nonetheless, it's a matter of scale. The cleanup of the Sacramento Army Depot shows it can be done."

Hirsch also notes that the depot's top brass have been "very proactive, innovative and supportive" of the cleanup effort. Roxanne Yonn, the base's public affairs chief, hinted that the lack of this kind of support may have caused delays at other bases. "Military tradition can be a hindrance," she said. "But we learned to cut through a lot of Army red tape. When it used to take years to get a contract out, we've done it in months."

Both Yonn and Hirsch added that close cooperation between project managers at the base and the regulatory agencies has helped. "The reason we're getting it done so quickly is not because we're doing it haphazardly, but because of some superb coordination. All (the relevant agencies) are working together toward a common goal," Yonn said. "We don't just sit and ponder. We say, 'We need to clean this up,' we get together, we brainstorm and then we go out and do it."

Swiss cheese with solvents

Even though this no-nonsense approach has begun to yield results, the physical cleanup itself will be exhaustive and time-consuming. Even a relatively straightforward problem — a leaky underground storage tank — was remedied only after eight months of continuous attention.

For more than 20 years, poisonous solvents had been poured into the tank. "We wondered why it never filled up," Oburn said. "We found out when we dug it up — it looked like Swiss cheese."

Tests showed the pollutants had leached 15 feet down into the ground. Removal was by "vacuum extraction," a process in which the air between soil particles, the medium of the contamination, was sucked out and filtered through carbon.

The vacuum extractor had to be run for 24 hours a day for eight months, with occasional stops for tests, before all traces of the solvents had been removed. Luckily, the tank was in light soil, which aided the effort. Denser soils would have made the job considerably more difficult.

Treating the base's considerable groundwater contamination by conventional means may take even longer. According to Oburn, the "pump and treat" method currently employed at the site will take until 2001.

Currently, the groundwater pollution stretches under a large portion of the depot, extending a quarter-mile beyond the perimeter to within a half-mile of the nearest drinking well.

To prevent further spread, seven wells were sunk at the depot's perimeter. Through these wells the plume of solvents is steadily

Please turn to page 25

SPECIAL REPORT

The depot mess: 'The Army went ahead and cleaned it up'

being pumped back into the base, where it is treated with hydrogen peroxide and ultraviolet light. The process creates "soda water" — in Oburn's words — a mixture of pure water, carbon dioxide and chlorine.

That's a long and slow chore. The plant has been running since 1989 and treats 500,000 gallons per day.

Enter some new gizmos

The air sparging — a "cutting-edge" technology currently being tested at a different depot site — could dramatically accelerate things.

"We were looking for a fast way to treat groundwater," Oburn explained. "In five years, pump-and-treat has pulled out 40 pounds of contaminants. Using this method we estimate that the groundwater will take until 2001 to be treated. ... Air sparging has pulled out 400 pounds in six weeks. ... Using air sparging, groundwater treatment could be completed as soon as 1996."

Though he is hopeful, Oburn stressed that the technology is not yet proven. The current pilot study will not be completed until next month.

In the past, criticism has been raised over private companies developing such experimental technologies with taxpayers' money. But Oburn dismissed the charge. He said the air sparging plant — built for \$500,000 by Kleinfelder Inc., a Sacramento-based consulting firm — is "extremely inexpensive." But "if air sparging works, it will save millions of

dollars over time."

Peterson, of the Toxics Campaign, said a lot of cleanup technology is by definition experimental, due to the fact that most of it has been developed in the last few years. "In the last decade the technology had to be developed to solve the problems," he said. "And the private sector is in the best position to develop and use that technology. The fact is, they're doing us a service. We're all in this together."

The depot's \$67 million cleanup budget is dwarfed by the price tag across town at McClellan. The tab there is estimated to run \$1.6 billion. The job is expected to last until 2010.

Oburn gave the following, approximate, breakdown of the recipients of depot cleanup moneys: The project's main consultant, Kleinfelder Inc., will receive \$30 million for reports, investigations and part of the cleanup itself. A large proportion of this work is, and was, subcontracted.

Terra Vac Corp., of San Leandro, received \$600,000 for treating the leaky solvent tank. OHM Remediation Services Corp., of Walnut Creek, signed a \$750,000 contract to clean up burn pits in the south of the base. USPC Inc. of Sacramento, the project's second-largest consultants, has a \$9 million contract to clean adjacent oxidation lagoons.

Most of the base's wells were drilled and monitored by Water Development Corp. of Woodland, which received \$2.5 million. Enesco-California Laboratories, a West Sacramento lab, was paid \$3 million for tests. Apple Inc., a Fresno-based lab,

received \$1 million. EBASCO Environmental, a North Sacramento consultant, has been paid 10 percent of a \$10 million contract for various reports and studies.

"The painful truth is that cleaning up pollution after the fact is extraordinarily expensive," said Peterson. "That's why we stress the importance of avoiding pollution in the first place, which is quite cheap compared to cleanup."

Cooling off remaining hot spots

Plans to clean up the remaining problems are well advanced.

At one site, soil from large oxidation lagoons in the south of the base will be dug up and washed of lead, cadmium and arsenic, which were dumped from the depot's plating shop. "It's like putting the dirt through a large washing machine," Oburn said.

Work at adjacent burn pits has already started. The ground is currently being ventilated, preparing the dirt to be dug up and cleaned of metal debris. However, extremely hazardous dioxins within the soil cannot be removed. As a warning to future generations, the partially cleaned soil will be mixed with cement to make a "huge brick," Oburn said, and sunk 12 feet underground.

Yonn, the depot spokeswoman, is confident the site will be safe. "Even though we don't expect it to be used for anything except industrial purposes, it will be cleaned to residential standards," she said. "You could build a day-care center on top of it. ... (The cement-and-soil brick) would make a great foundation."

Plans for the depot's reuse are in the

preliminary stages, said Mark Kraft, project manager of the Army Depot Re-use Commission of the city of Sacramento.

"The city will almost certainly get the title," he said. "We are hoping it will be used in line with the city's general goals concerning economic development." Specifically, Kraft said the city hoped to attract light and high-tech industry "that will employ the maximum numbers of local people."

Kraft said the reuse plans should be consummated by fall next year. Already, interest in the site has been fairly high. "Considering it has not been advertised and the constraints on the property — it is largely developed and definitely an industrial site, not really suitable for offices — there have been quite a few inquiries about the land."

Though the depot is scheduled to close in July 1997, the Army is hoping to shut it a year earlier — especially if current cleanup projections are realized.

The success of the Army Depot augurs well for other military base cleanups, the experts agreed.

"The difference between Mather and McClellan and the Army Depot is a matter of scale and commitment," said Peterson, of the Toxics Campaign. "The technology is at hand, it's just the commitment that's lacking. But, having said that, McClellan is going in the right direction."

Oburn has little patience for anything short of the depot's "can do" attitude. "It annoys me when I hear people saying Superfund cleanups can't be done. I want to prove it can."

Appendix D

Infrastructure Disposal

- D.1 Infrastructure—A Major Issue
- D.2 Formation of an Infrastructure Group
- D.3 Disposal Options
- D.4 Conveyance Results
- D.5 Conclusions and Recommendations



Appendix D

Infrastructure Disposal

D.1

Infrastructure—A Major Issue

Closing installations typically contain aging, if not obsolete, infrastructure. Past DoD policy resulted in infrastructure components (electrical, telephone, gas distribution systems, etc.) being owned and maintained by the federal government. Due to federal supremacy clause and special requirements for military installations (i.e., additional capacity and redundancy), most infrastructure components are often aged or not consistent with the systems of local utility purveyors. In addition, since DoD is trying to dispose of property, it is not willing to put more money into infrastructure improvements prior to disposal.

The staff at the Sacramento Army Depot recognized early in the closure process that infrastructure could well become a major issue. The 45-year-old infrastructure system was designed for a single user, yet would likely be divided for reuse by multiple users. Another concern was that the Navy/Marine Corps Reserve Training Center, Army Reserves, and California Army National Guard were remaining on the site at the southern-most part of the installation. Most of the utility systems were on the north post. Therefore, arrangements would be necessary to separate these systems and still maintain the viability of the South Post after the North Post was closed and property disposed.

As it turned out, the City applied for the remaining installation (371 acres) under an economic development conveyance. As part of that conveyance it received title to all the infrastructure.

D.2

Formation of an Infrastructure Group

Because of the obvious necessity to deal with the infrastructure issues, the Depot formed a working group comprised of the Army, the City of Sacramento (and Redevelopment Agency), and all of the installation's tenants. This group met monthly to discuss infrastructure issues, coordinate with each other, and resolve concerns. As part of this effort, Foster Wheeler Environmental was tasked to prepare an Infrastructure Condition Survey. The purpose of the survey was to ascertain the present condition and capacity of the infrastructure, estimate its present value, and determine the cost to bring the systems into compliance with existing codes. The study included an analysis of the water, electrical, natural gas, telephone, sanitary sewer, storm drain, roads, railroad, and street lighting systems.

This study satisfied several useful objectives:

- It identified the existing capacity and condition of each system
- It brought together representatives of the utilities and the military
- It provided a basis for negotiations on the value of the infrastructure
- The sewer condition study identified breaks in the sewer line providing additional information to the regulatory agencies concerned with historical dumping of wastes into the sanitary sewer

An early "ball park" estimate of the cost to upgrade the utility systems to meet code requirements was \$22 million: \$3 million for water, \$11 million for sewer, \$3 million for railroads, \$1 million for gas, \$2 million for the electric system, \$1 million for roads and \$1 million for telephone. However, the final results of the

Infrastructure Condition Survey estimated that it would only cost \$4.7 million to bring all of the utility systems up to code.

D.3

Disposal Options

During this same time period, ACOE had been going through the property screening process. As a result, several entities had expressed an interest in the site and many groups had applied for Public Benefit Conveyances. The following disposal options were identified:

D.3.1

Army Abandons the Infrastructure In-Place

Considerations and consequences of this action:

- The condition of the infrastructure systems deteriorates exponentially without maintenance.
- The value of the land and buildings leased or sold is usually dependent upon the infrastructure being usable.
- The buyer of the land assumes all costs associated with upgrading or constructing new infrastructure. The federal government will not provide upgrade funds.
- The land and buildings are much harder to sell in a competitive market without working infrastructure.
- This is the fastest way to take care of infrastructure disposal.
- Does not meet the intent of the President's Five-Part program.

D.3.2

Army Operates and Maintains Infrastructure

Considerations and consequences of this action:

- All installation property including infrastructure has to be disposed of to comply with the intent of BRAC law.
- The Army will not likely fund and staff the operation of an infrastructure system more than one year after closure.
- The Army will do very little, if any, maintenance on the infrastructure systems after closure. The value of the infrastructure systems deteriorates exponentially without maintenance.
- The Army can only charge new owners of property in the Reuse Area for utility service based on a prorated basis (resale based on metering is against CPUC Rule No. 18).
- The value of the land and buildings leased or sold depends upon the infrastructure being useable.
- Allows interim use of the property, which encourages reuse.

D.3.3

Army Transfers Infrastructure to a Special Utility District

Considerations and consequences of this action:

- Disposal of infrastructure is easier from Army's viewpoint since only one entity has to be dealt with.

- The value of the infrastructure would be negotiated between the Special Utility District and the federal government.
- In the past, it has taken 5 years or more to set-up a special utility district.
- A utility district was not a practical solution to the infrastructure issue at SADA because of the relatively small size of the installation.

[Note: This is a method being considered at Ft. Ord, California]

D.3.4

Army Transfers Infrastructure to each Purveyor (by Auction or Negotiated Sale)

Considerations and consequences of this action:

- Disposal of infrastructure is difficult from the Army's viewpoint. There may be no bids on some of the utility systems.
- The value of the infrastructure may be negative in some cases.
- Control and integration of infrastructure for reuse would be difficult.
- The disposal process would be time consuming and costly.

[Note: This system is being used at Mather AFB, California. The water, sewer and road systems were deeded to Sacramento County under a public benefit conveyance. It received bids for the public sale of the electric, gas and telephone systems. Two bids were received for the electric distribution system and only one bid was received for the gas and telephone systems].

D.3.5

Army Transfers Reuse Area and All the Infrastructure to the Community

Considerations and consequences of this action:

- The community would assume all costs associated with upgrading or constructing new infrastructure.
- Community could manage infrastructure directly or through a contractor.
- From the Army's viewpoint, disposal of infrastructure would be fast and easy.
- The community would have to negotiate directly with the utility companies for the services.
- The cost to modify infrastructure to meet safety and CPUC standards (and reuse requirements) would be evaluated in determining fair market value of land.
- This was the method used at the Sacramento Army Depot.

D.3.6

Army Sells the Land and All Infrastructure to A Private Entity

Considerations and consequences of this action:

- Easiest disposal of infrastructure from Army's viewpoint.
- Very difficult to find a single buyer to purchase all of the land.
- The cost to modify the infrastructure to meet safety standards and reuse requirements would be evaluated in determining the fair market value of the land.

- The buyer of the land would assume all costs associated with upgrading or constructing new infrastructure.
- The fastest way to dispose of the property with useable infrastructure systems.

D.4

Conveyance Results

The City of Sacramento received the utilities as part of the economic development conveyance. The City, through the Sacramento Housing and Redevelopment Agency (SHRA), will maintain and operate the utility systems, with the systems becoming privatized over time. The SHRA is a city-county joint-powers agency (JPA). Packard Bell, as lessee of the City, will use \$17 million in city loans to upgrade the utilities and buildings. These costs will offset the fair market rent due to the Army.

The City of Sacramento will maintain and operate the gas, electric and telephone distribution lines. Tenants (Packard Bell, Foodlink, CSUS, Army Reserves, etc.) will be billed on an estimated pro rata utility charge for electricity and water. The City cannot by law rebill the gas. Therefore, it is going to establish flat rates for gas based on historical use rates. Ownership of the sanitary sewer system will be transferred to the County. Packard Bell will lay fiber optic lines from the Pacific Bell main line. The City is hiring a single contractor to operate and maintain the utility systems.

The City of Sacramento views the parcels provided to Foodlink and CSUS as undeveloped and is requiring them, within the next year, to file a development map with the City. The access road to these parcels will be upgraded and utilities serving these owners will be separated from the City property and placed in the road right-of-way.

The City of Sacramento has agreed to pay the Army \$7.2 million in 10 years. At that time, Packard Bell (who currently has a 55-year lease with the City) has an option to purchase the 124 acres it now has, plus an additional 160 acres, from the City for \$6.8 million. This has truly been a "win-win" situation for all parties.

D.5

Conclusions and Recommendations

- Address the infrastructure requirements as soon as possible.
- Perform a Conditions Survey of all utility system as soon as possible.
- Meet on a regular basis. This enhances communication and keeps all of the parties working together as a team.
- Work closely with the utility purveyors. We hired the utilities to perform the condition surveys so that they understood the system condition and the costs to upgrade. Before the utilities can give estimates as to the cost to upgrade, they need a master plan of the reuse to ensure proper sizing of the systems.
- Team work between the military and the community is essential. The success we had would not have occurred without active involvement of the City of Sacramento and its willingness to take a large risk (\$22 million in loans to Packard Bell). You cannot become antagonists and expect to have a "win-win" result.

- The property and infrastructure will probably be put into reuse in a phased manner. Therefore, infrastructure modifications can also be done in a phased manner (as opposed to all at once with a large initial cost). Reuse income could pay for some of the infrastructure modifications.



Appendix E

Conceptual Site Models

Table E-1	Conceptual Site Model Data Summary and Chemical Standards Summary
Table E-2	Summary of Background Concentration
Table E-3	Total Metal Results for Background Groundwater Locations
Plates	TCE Isoconcentrations in Zones
Plate	Final Groundwater Model
Plate	Air Sparging Operation at Parking Lot 3
Plates	TCE Parking Lot 3 Pilot Test
Plates	Freon 113 Isoconcentrations in Zones
Plates	Tank 2
Plates	Oxidation Lagoons
Plates	Burn Pits
Plates	Building 300 Burn Pits
Plate	Pesticide Mix Area
Plate	Battery Disposal Well
Plate	Bioventing at Building 205



Table E-1.
Conceptual Site Model Data Summary and Chemical Standards Summary

Table E-1. Conceptual Site Model Data Summary and Chemical Standards Summary
Sacramento Army Depot

Current Site ID (Past Site ID)	Site Description and Source Characterization	Background Concentrations ¹	Pathway Description	Potential Receptors ²				Contaminants, Chemical Standards, Exceedances and Potential Restoration Goals					
				Human Receptors			Media/ Contaminant	ARAR	Source	Exceedance of ARAR	Risk-Based Restoration Goal ³	Technology Based Restoration Goal ³	
				On-site Workers	Nearest Off-site Residents								
					Current	Future							With GW Well
Groundwater (OUFS)	Consisting of four water bearing zones located between 79 and 230 feet below ground level below ground surface. On-site and off-site contamination by volatile organic chemicals (VOCs).		Ingestion of VOCs in groundwater (gw). Inhalation of chemical vapors from gw. Dermal absorption of chemical in gw.	L	L	H	L	Groundwater/TCE, PCE, DCE, 1,2-DCA (EDC) Carbon Tetrachloride Freon 113 Chloroform	5 ug/l 5 ug/l 6-10 ug/l 0.5 ug/l 0.5 ug/l 1200 ug/l 100 ug/l	Cal. MCL Cal. MCL Cal. MCL Cal. MCL Cal. MCL Cal. MCL Cal. MCL	Yes Yes Yes Yes No No	2.5 ug/l 1.4 ug/l 77-150 ug/l 0.2 ug/l 0.28 ug/l 76,000 ug/l 0.28 ug/l	5 ug/l 5 ug/l 6-10 ug/l 0.5 ug/l 0.5 ug/l 1200 ug/l 100 ug/l
Tank 2 (OUFS)	Leaking Underground Storage Tank previously used to store solvents. Soil contaminated by waste solvents from Tank 2.		Incidental ingestion of chemicals in soil. Dermal absorption of chemicals in soil. Inhalation of chemical vapors in soil. Ingestion of VOCs in groundwater (gw). Inhalation of chemical vapors from gw. Dermal absorption of chemicals in gw.	L	L	L	L	Soil/Benzo(a)anthracene, Benzo(g,h,i)perylene, 2-Butanone, Dieldrin, 2,4-Dimethylphenol, Ethylbenzene, Chrysene, Heptachlor epoxide, Indeno(1,2,3-c,d)pyrene Naphthalene, Xylenes, Perchloroethylene (PCE)	NA NA NA NA NA NA NA NA NA NA	--- --- --- --- --- --- --- --- --- ---	1.2-3.9 mg/kg NA mg/kg NA mg/kg 0.05-0.18 mg/kg 760-20,000 mg/kg 310 mg/kg 120-390 mg/kg 0.09-0.3 mg/kg 1.2-3.9 mg/kg 80 mg/kg 99 mg/kg 22-58 mg/kg	Non-detected Non-detected Non-detected Non-detected Non-detected Non-detected Non-detected Non-detected Non-detected Non-detected	
Oxidation Lagoons (OUFS)	Waste holding ponds used for the disposal of plating shop wastes containing metals.		Incidental ingestion of chemicals in soil. Dermal absorption of chemicals in soil. Inhalation of chemicals in fugitive dust.	M	M	L	L	Soil/Antimony, Arsenic, Cadmium, Chromium (total) Copper Lead Mercury Nickel Silver Zinc	NA NA NA NA 174 ug/l NA NA NA NA NA	--- --- --- --- Yes --- --- --- --- ---	31-820 mg/kg 0.97-33 mg/kg 39-490 mg/kg 2900-76,000 mg/kg 500 mg/kg 23-610 mg/kg 1600-41,000 mg/kg 390-10,000 mg/kg 23,000- 100,000 mg/kg	None 5 mg/kg 40 mg/kg None None 174 mg/kg None None None None	
South Post Burn Pits (OUFS)	Two pits used to bury and burn a variety of material such as plating shop wastes, paint sludge, mercury batteries, construction debris, and waste from Building 300 Old Burn Pits.		Incidental ingestion of chemicals in soil. Dermal absorption of chemicals in soil. Inhalation of chemicals in fugitive dust. Inhalation of chemical vapors from soil. Ingestion of VOCs in groundwater (gw). Inhalation of chemical vapors from gw. Dermal absorption of chemicals in gw.	M	L	L	L	Antimony Arsenic Cadmium Chromium VI cis-1,2-Dichloroethylene Lead PCBs PCE Trichloroethylene (TCE)	NA NA NA NA NA NA NA NA NA	--- --- --- --- --- --- --- --- ---	31-820 mg/kg 0.97-33 mg/kg 39-490 mg/kg 390 mg/kg 210-300 mg/kg 500 mg/kg 0.1-0.4 mg/kg 220-560 mg/kg 14-25 mg/kg	None 7.3 mg/kg 88 mg/kg None 174 mg/kg None Non-detected Non-detected Non-detected	
Pesticide Mix Area (RI/FS)	Area used for the rinsing of pesticide containers. Rinse water was allowed to flow onto the open ground		Incidental ingestion of chemicals in soil. Dermal absorption of chemicals in soil. Inhalation of pesticides as vapors or in fugitive dust.	M	M	L	L	Soil/4,4'-DDT 4,4'-DDD 4,4'-DDE Chlordane gamma-BHC ⁴	NA NA NA NA NA	--- --- --- --- ---	2.5-8.4 mg/kg 3.5-12 mg/kg 2.5-8.4 mg/kg 0.7-2.2 mg/kg 0.7-2.2 mg/kg	2.5-8.4 mg/kg 3.5-12 mg/kg 2.5-8.4 mg/kg None None	

Table E-1. Conceptual Site Model Data Summary and Chemical Standards Summary
Sacramento Army Depot

Current Site ID (Past Site ID)	Site Description and Source Characterization	Background Concentrations ¹	Pathway Description	Potential Receptors ²				Contaminants, Chemical Standards, Exceedances and Potential Restoration Goals					
				Human Receptors			W/O GW Well	Medial/ Contaminant	AFAR	Source	Exceedance of AFAR	Risk-Based Restoration Goal ³	Technology Based Restoration Goal ⁴
				On-site Workers	Future	Nearest Off-site Residents With GW Well							
				Current									
Battery Disposal Well (R1/F5)	Area used for the disposal of dry cell batteries and other industrial debris.		Incidental ingestion of chemicals in soil Dermal absorption of chemicals in soil Inhalation of chemical in fugitive dust.	M	M	L	L	Soil/Cadmium Lead Benzofluorene ⁵	NA NA NA	---	---	39-490 mg/kg 500 mg/kg 0.12-0.39 mg/kg	Background Background Background
Building 300 Old Burn Pits (R1/F5)	Area used for the disposal of plating shop wastes, paint sludge, acids, radium dial paint and mercury batteries.		Incidental ingestion of chemicals in soil Dermal absorption of chemicals in soil Inhalation of chemicals in fugitive dust. Inhalation of chemical vapors from soil Ingestion of VOCs in groundwater (gw) Inhalation of chemical vapors from gw. Dermal absorption of chemicals in gw.	M	M	L	L	Soil/Arsenic Beryllium Cadmium Lead PCBs (Arochlor 1260)	NA NA NA NA NA	---	---	0.98-33 mg/kg 0.4-1.3 mg/kg 39-490 mg/kg 500 mg/kg 0.1-0.4 mg/kg	7.3 mg/kg None 88 mg/kg 174 mg/kg None
Firefighter Training Area (R1/F5)	Area reportedly used for Depot firefighting training purposes.		No significant exposures expected					NA					
Cyanide Leach Field (Building 320) (RFA - 021B)	Reportedly leach field from the cyanide sump located east of the site. The leach field was reported to not work due to the low permeability of the soil.		No significant exposures expected					NA					
Building 382 (gasoline spills) (RFA - 015B)	Reported spills of gasoline and oil near Building 382 and Warehouse 7.		No significant exposures expected					NA					
Outdoor Storage of Wastes (RFA - 017B)	Site was used for the storage of drummed hazardous waste.		No significant exposures expected					NA					
Paint, Residue and Waste Oil Dump (RFA - 016B)	Site was reportedly used as a dump for paints, residues, and waste oils. Site was indicated based on interviews with depot employees and not on physical evidence or sampling.		No significant exposures expected					NA					

Table E-1. Conceptual Site Model Data Summary and Chemical Standards Summary
Sacramento Army Depot

Current Site ID (Past Site ID)	Site Description and Source Characterization	Background Concentrations ¹	Pathway Description	Potential Receptors ²				Contaminants, Chemical Standards, Exceedances and Potential Restoration Goals					Technology Based Restoration Goal ³
				Human Receptors		Nearest Off-site Residents With GW Well	W/O GW Well	Media/ Contaminant	ARAR	Source	Exceedance of ARAR	Risk-Based Restoration Goal ⁴	
				On-site Workers	Current								
Building 315 (Cyanide Sump) (RFA – 012B)	Reportedly a 12,000 gallon sump used to hold waste containing cyanide, cadmium and zinc prior to transfer to the purported cyanide leach field.		No significant exposures expected					NA					
Building 316 (Acid Sump) (RFA – 013B)	Reportedly a 12,000 gallon sump used to hold acid wastes and metals.		No significant exposures expected					NA					
Old Morrison Creek (east portion) (RFA – 018B)	Portion of Old Morrison Creek which flowed through the eastern portion of the Depot based on past aerial photos.		No significant exposures expected					NA					
Possible Shallow Lagoon (RFA – 014B)	Initially indicated from a 1953 aerial photo as a shallow dry depression.		No significant exposures expected					NA					
Fill Area with Numerous Vehicles (RFA – 019B)	The site was reportedly used for open storage of vehicles and equip- ment.		No significant exposures expected					NA					
Possible Trenches (RFA – 010B)	Two parallel trenches indicated from a 1957 aerial photo. Not visible in a 1961 aerial photo.		No significant exposures expected					NA					
Two Trenches (RFA – 011B)	Site consists of a north/ south trench and an east/west trench. This site is located adjacent to the Contractor's Spoils Area and Old Morrison Creek.		No significant exposures expected					NA					
5000-gallon Hazardous Waste Tank No. 1 (RFA – 031B)	Tank No. 1 was an underground storage tank used for the storage of battery acid from the mid 1950's to the late 1970's.		No significant exposures expected					NA					

Table E-1. Conceptual Site Model Data Summary and Chemical Standards Summary
Sacramento Army Depot

Current Site ID (Past Site ID)	Site Description and Source Characterization	Background Concentrations ¹	Pathway Description	Potential Receptors ⁴				Contaminants, Chemical Standards, Exceedances and Potential Restoration Goals					Technology Based Restoration Goal ³
				Human Receptors				Media/ Contaminant	ARAR	Source	Exceedance of ARAR	Risk-Based Restoration Goal ²	
				On-site Workers	Nearest Off-site Residents	With GW Well	W/O GW Well						
				Current	Future								
Contractor's Storage Area (RFA - 054B)	Site is located north of Building 348 and has been reportedly used for the storage of construction materials and some waste materials by contractors working at SAAD. The site is covered with grassy vegetation.		No significant exposures expected					NA					
Contractor's Spoils Area (RFA)	Site consists of a number of soil piles various amounts of construction debris (e.g. asphalt, concrete, scrap metals), and various organic material such as grass cuttings, W/Rs	Incidental ingestion of soil. Dermal absorption of chemicals in soil. Inhalation of chemicals as vapors or in fugl-live dust.		L-M L-M L-M	L L L	L L L	L L L	Lead Zinc Benzo(a)pyrene	174 mg/kg NA NA	Cal. DTSC --- ---	Yes --- ---	500 mg/kg 100,000 mg/kg 0.12-0.39 mg/kg	None None None
Rail Yard Engine Shed (RFA)	Site consists of two buildings used for the maintenance of the Depot's locomotive switch engine.	Incidental ingestion of soil. Dermal absorption of chemicals in soil. Inhalation of chemicals as vapors or in fugl-live dust.		L L L	L L L	L L L	L L L	Soil/Diesel Gasoline	NA NA	--- ---	--- ---	NA NA	None None
GROUP C SITES													
29 Sites (Negative Response)	These sites consist of various potential disposal or spill areas located throughout the Depot.		No significant exposures expected					NA					
ADDITIONAL SITES													
Freon 113 Area (New)	Site consists of a square-shaped area approx. 10 acres in size located in the vicinity of Building 320, 321, 325, 330, 420 and 423.	Incidental ingestion of soil. Dermal absorption of chemicals in soil. Inhalation of chemicals in fugl-live dust. Inhalation of chemical vapors from soil. Ingestion of VOCs in groundwater (gw). Inhalation of chemical vapors from gw. Dermal absorption of chemicals in gw.		L L L L L L L	L L L L L M M	L L L L L M M	L L L L L L L	Groundwater/Carbon Tetrachloride Freon 113 1,1-Dichloroethene, PCE TCE	0.5 ug/l 100 ug/l 1200 ug/l 8 ug/l 5 ug/l 5 ug/l	Cal. MCL Cal. MCL Cal. MCL Cal. MCL Cal. MCL	No No No Yes Yes	.26 ug/l .28 ug/l 78,000 ug/l 0.07 ug/l 1.4 ug/l 2.5 ug/l	0.5 ug/l 100 ug/l 1200 ug/l 8 ug/l 5 ug/l 5 ug/l

Table E-1. Conceptual Site Model Data Summary and Chemical Standards Summary
Sacramento Army Depot

Current Site ID (Past Site ID)	Site Description and Source Characterization	Background Concentrations ¹	Pathway Description	Potential Receptors ²				Contaminants, Chemical Standards, Exceedances and Potential Restoration Goals					Technology Based Restoration Goal ³
				Human Receptors		Media/ Contaminant	ARAR	Exceedance of ARAR	Risk-Based Restoration Goal ²				
				On-site Workers	Nearest Off-site Residents With GW Well					W/O GW Well			
				Current	Future								
Parking Lot 3 (New)	Site consists of a parking lot approx. 280 ft. x 360 ft. located in western central portion of the Depot, with localized soil and groundwater contamination by VOCs.		Incidental Ingestion of soil	L	L	L	Groundwater/Carbon Tetrachloride, Chloroform TCE 1,2-Dichloroethane	0.5 100 5 0.5	Cal. MCL Cal. MCL Cal. MCL Cal. MCL	No No Yes No	0.28 ug/l 0.28 ug/l 2.5 ug/l 0.2 ug/l	0.5 ug/l 100 ug/l 5 ug/l 0.5 ug/l	
			Dermal absorption of chemicals in soil	L	L	L							
			Inhalation of chemicals in fugitive dust	L	L	L							
			Inhalation of chemical vapors from soil	L	L	L							
			Ingestion of VOCs in groundwater (gw)	L	M	L							
			Inhalation of chemical vapors from gw	L	M	L							
			Dermal absorption of chemicals in gw	L	M	L							

¹ Background concentrations of organic chemicals assumed to be less than, or equal to detection limits (i.e. not detected).

² Sources: Region IX Preliminary Remediation Goals (PRGs), fourth quarter 1993.

³ Reference: Stevedore Feasibility Study, Sacramento Army Depot, 1994.

NA = Data not available

4 KEY:

L = Relatively low degree of exposure expected.

M = Relatively moderate degree of exposure expected.

H = Relatively high degree of exposure expected.



Table E-2. Summary of Background Concentration

Table E-2. Summary of Background Concentrations, Sacramento Army Depot
Tabulated March, 1993

	Soils		
	Number Detects	Number Nondetect	Maximum mg/kg
Volatile Organic (mg/kg)			
2-Butanone	0	89	0.008
Ethylbenzene	0	89	0.004
Tetrachloroethylene (PCE)	0	89	0.004
Xylenes	3 ^(J)	89	0.004
1,2-Dichloroethylene (Total)	0	89	0.004
Trichloroethylene (TCE)	0	89	0.004
Base Neutral (mg/kg) EPA 625, Semi Volatiles			
Chrysene	0	65	0.225
Di-n-Butyl Phthalate	3 ^(J)	65	0.225
Dieldrin	NA	NA	NA
Heptachlor Epoxide	NA	NA	NA
Indeno[1,2,3-c,d]pyrene	0	65	0.225
Naphthalene	0	65	0.225
DDT (4,4'-)	NA	NA	NA
Chlordane	NA	NA	NA
gamma-BHC	NA	NA	NA
PCB 1260	NA	NA	NA

NOTES: (J) = Detected at concentrations < sample quantitation limit.
NA = Not Analyzed

+ Background samples PP-3, PP-7, PP-8, PP-15, and 010B-1 through 010B-8



Table E-3. Total Metal Results for Background Groundwater Locations

Table E-3. Total Metal Results for Background Groundwater Locations

Metal	Unfiltered Results			
	(¹)Frequency of Detection	Maximum Concentration (ug/L)	Location of Maximum	Turbidity (NTUs)
Aluminum	2/5	1800	MW-19	Not Available(²)
Arsenic(⁴)	4/40	4.5	MW-41	3.0
Barium(⁴)	4/9	66.5	MW-19	3.0
Beryllium(⁴)	1/40	0.48	MW-42	3.5
Boron	1/10	51.8	MW-19	NA(²)
Calcium	43/43	50000	MW-11	NA(²)
Chromium	16/45	10	MW-11,19,41, 42	NA(²)
Cobalt(⁴)	1/9	1.1	MW-41	3.0
Copper(⁴)	1/73	2.5	MW-11	4.0
Iron(³)	5/41	140	MW-11	NA(²)
Lead	0/45	—	—	—
Magnesium	44/44	21000	MW-19	NA(²)
Manganese(³)	0/37	—	—	—
Mercury(⁴)	2/44	0.26	MW-41	3.0
Nickel	0/41	—	—	—
Potassium(⁴)	3/13	2000	MW-19	3.0
Sodium(³)	43/43	20000	MW-19	NA(²)
Vanadium(⁴)	4/9	21.1	MW-41	3.0
Zinc	2/74	50	MW-41	—

(¹) Number of positive detections/total number of observations.

(²) NA = Not Available. Turbidity typically less than 5 NTU

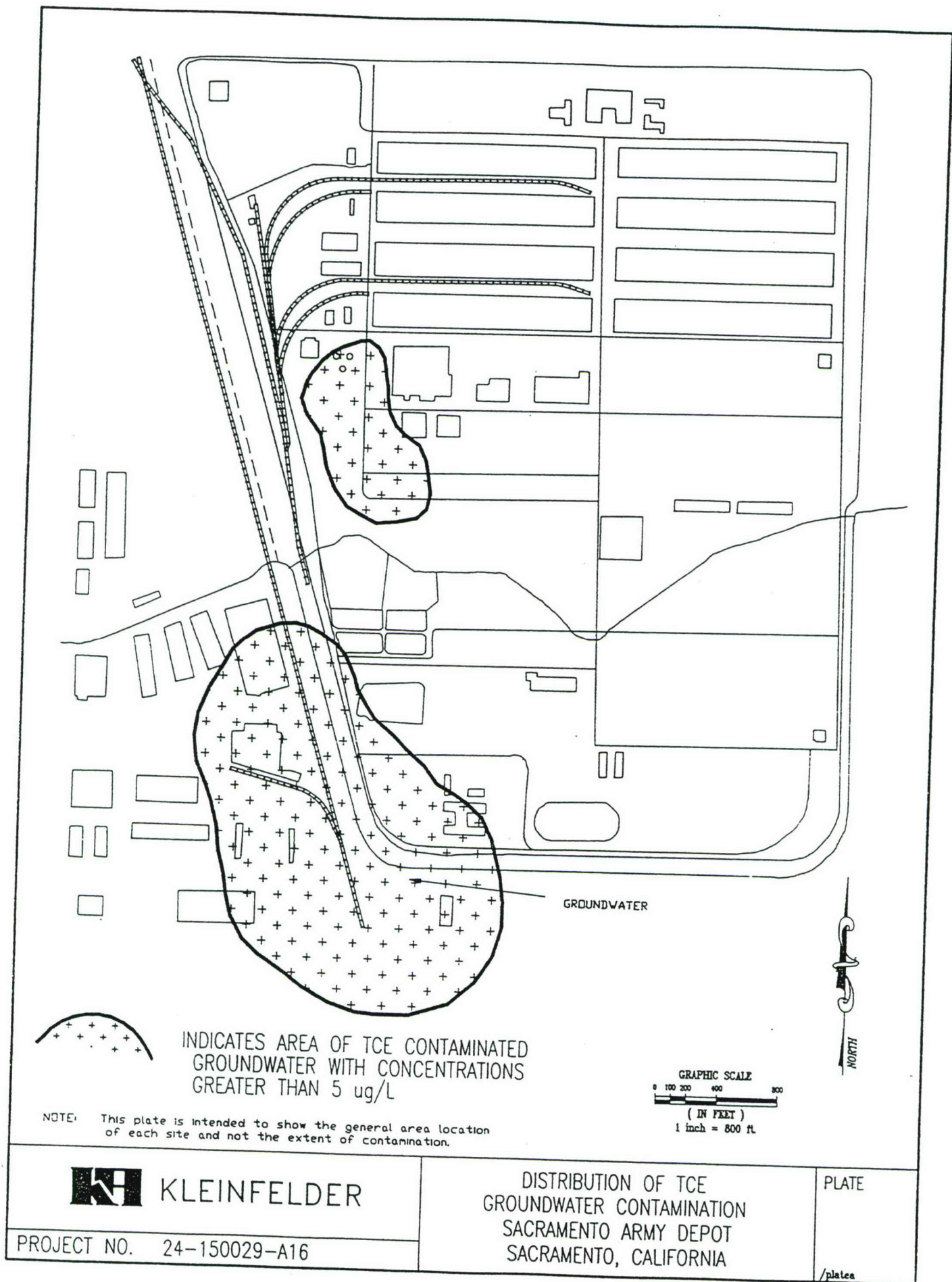
(³) Summary information is based on monitor wells only. (MW-11, MW-19, MW-41, MW-42).

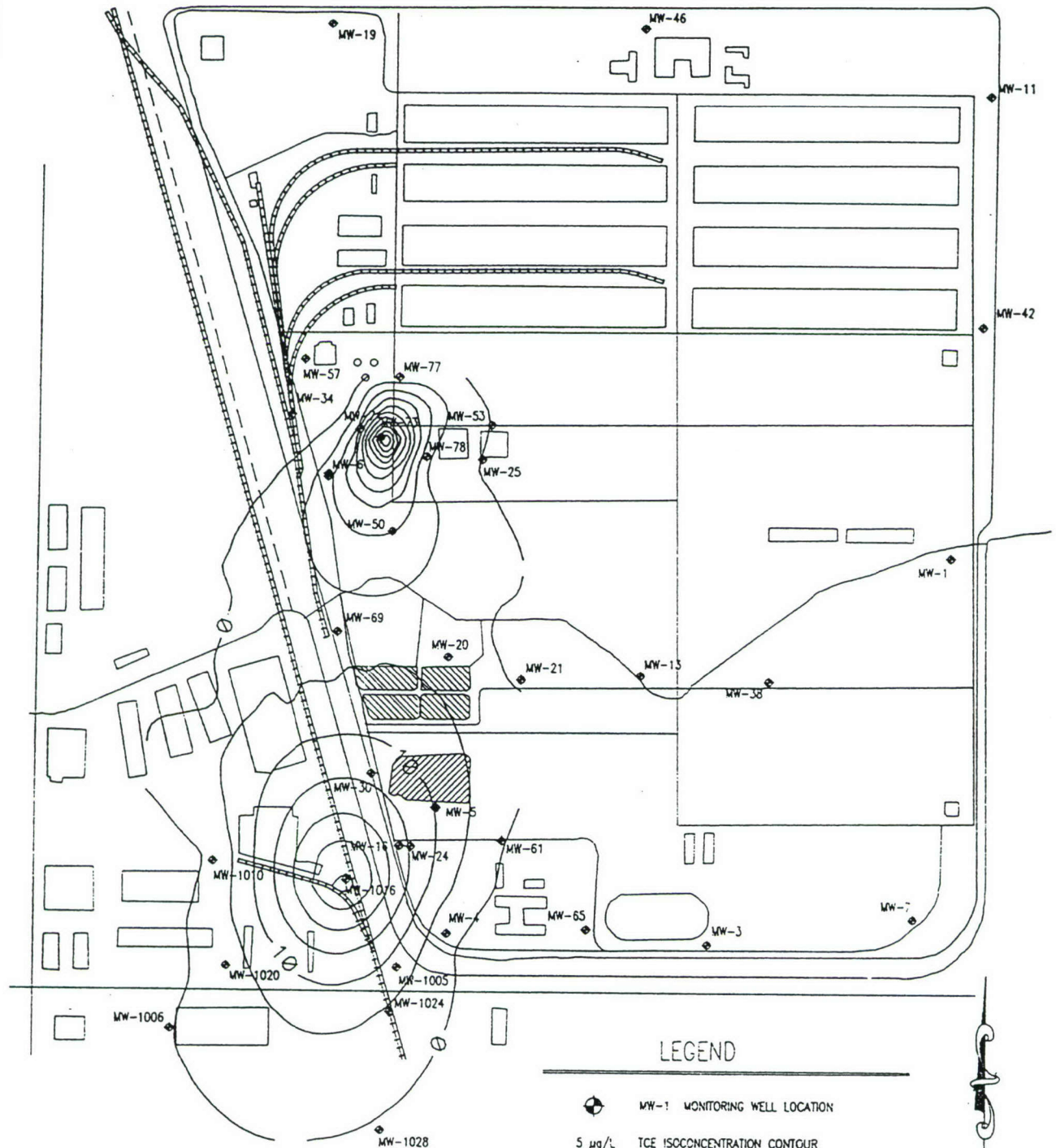
(⁴) Positive detections occurred during low detection limits analysis (Fall 1993 Quarterly Sampling).

* Samples not field filtered prior to sample collection in HNO₃ -preserved containers.



Plates: TCE Isoconcentrations in Zones





LEGEND

- MW-1 MONITORING WELL LOCATION
- 5 µg/L TCE ISOCONCENTRATION CONTOUR

GRAPHIC SCALE
0 100 200 400 800
(IN FEET)
1 inch = 800 ft.

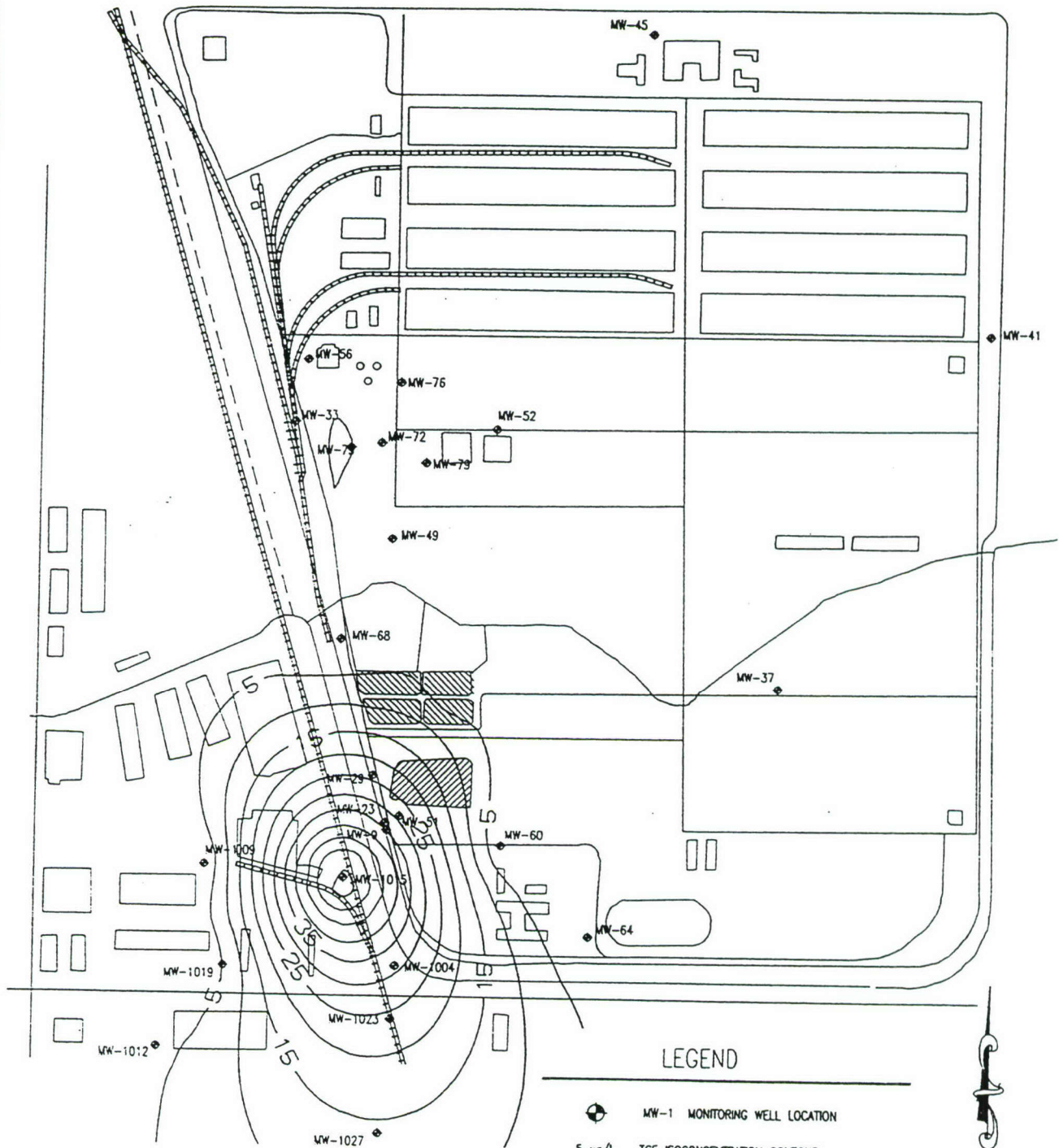


KLEINFELDER

PROJECT NO. 24-150035-D07

ZONE A TCE ISOCONTOUR
SUMMER QUARTER 1993
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE



LEGEND

- MW-1 MONITORING WELL LOCATION
- 5 $\mu\text{g/L}$ TCE ISOCONCENTRATION CONTOUR

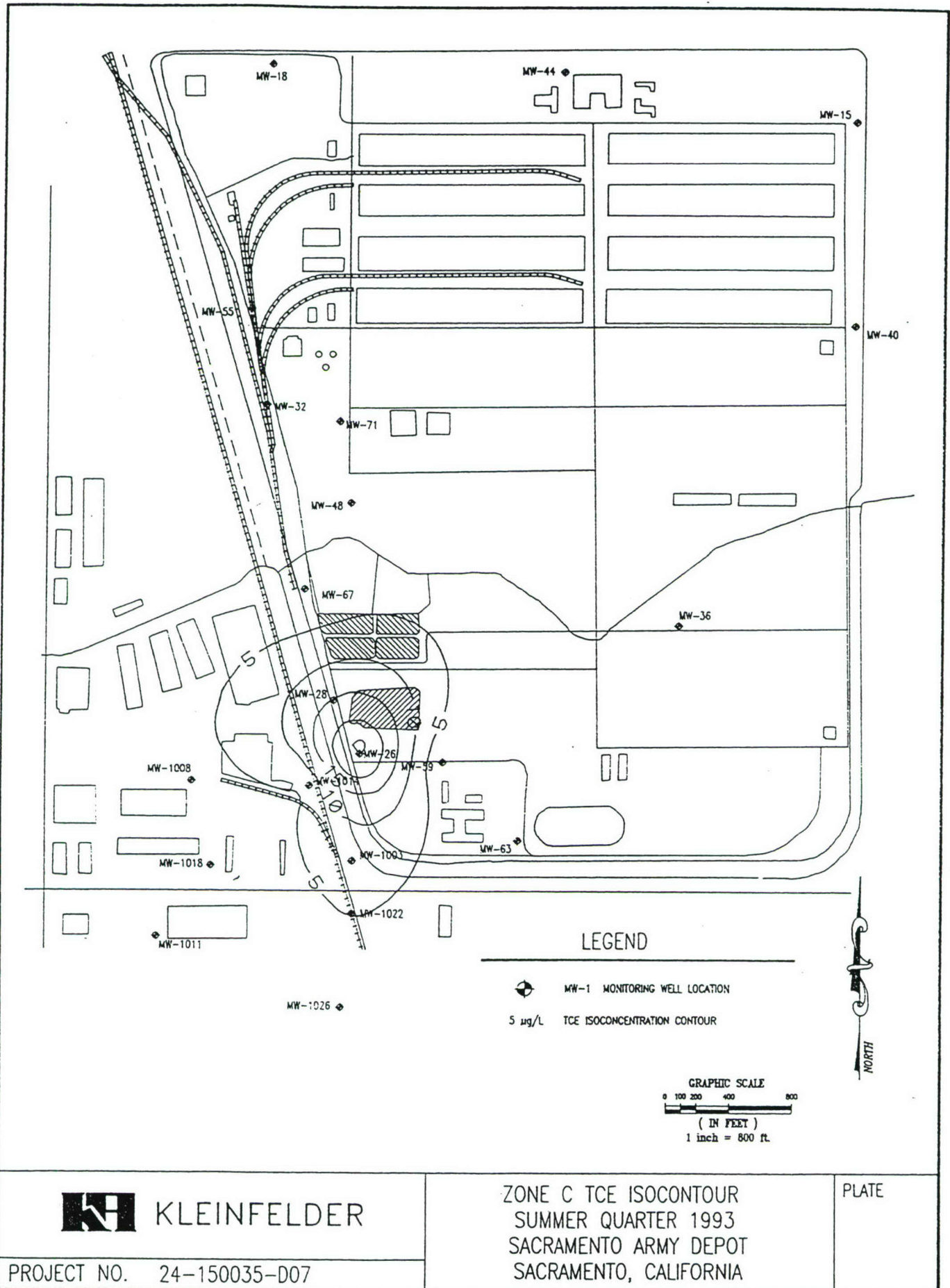
GRAPHIC SCALE
0 100 200 400 800
(IN FEET)
1 inch = 800 ft.

KLEINFELDER

ZONE B TCE ISOCONTOUR
SUMMER QUARTER 1993
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

PROJECT NO. 24-150035-D07

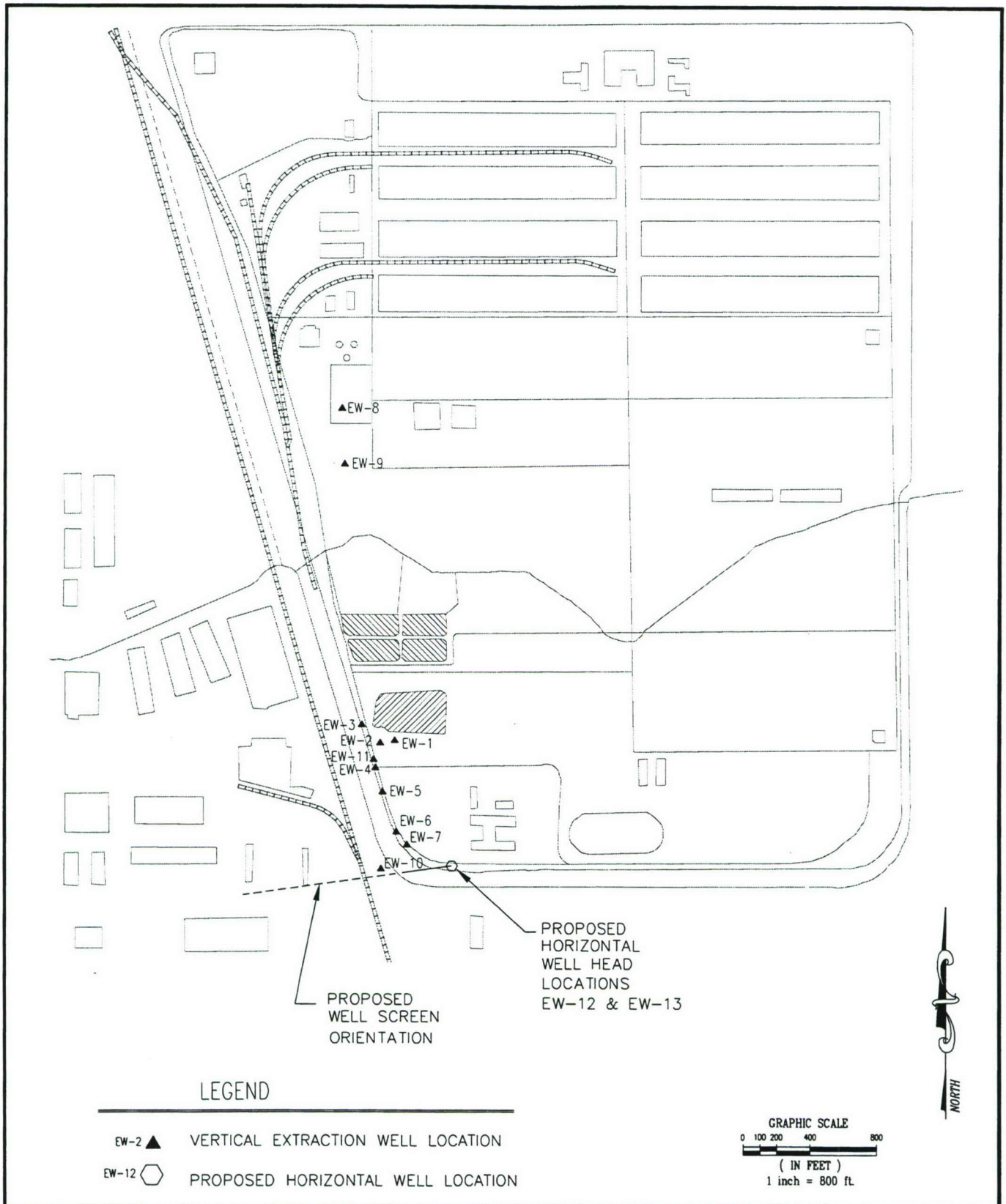


KLEINFELDER

PROJECT NO. 24-150035-D07



Plates: Final Groundwater Model



KLEINFELDER

DRAWN BY: L. DANG
PROJECT No. 24-150048-A08

DATE: 9-11-95
DWG No. 0299A

EXTRACTION WELL LOCATION MAP

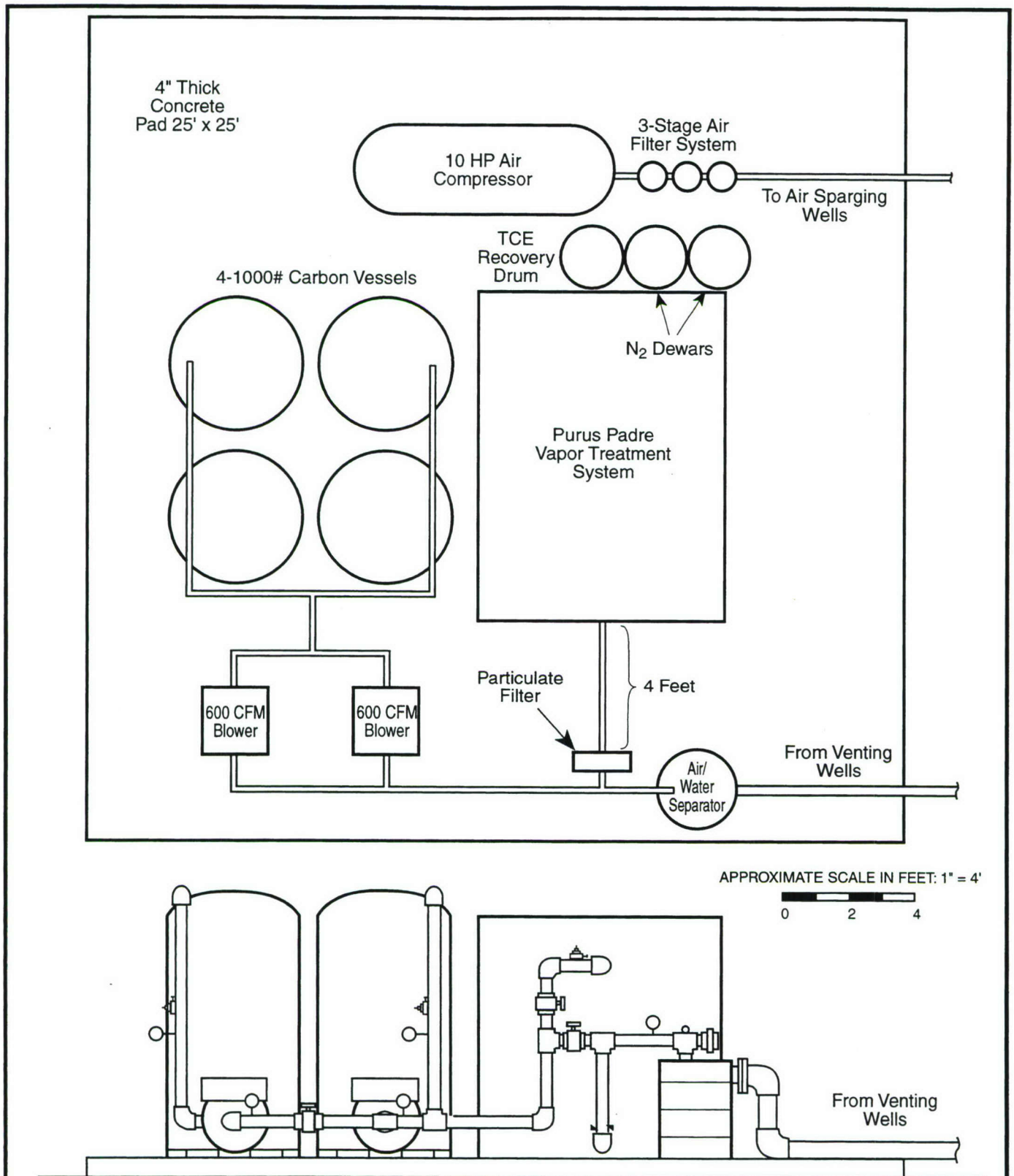
SACRAMENTO ARMY DEPOT

PLATE

2



Plates: Air Sparging Operation at Parking Lot 3



KLEINFELDER

DATE PRODUCED: 6/2/93 DATE REVISED: 6/25/93

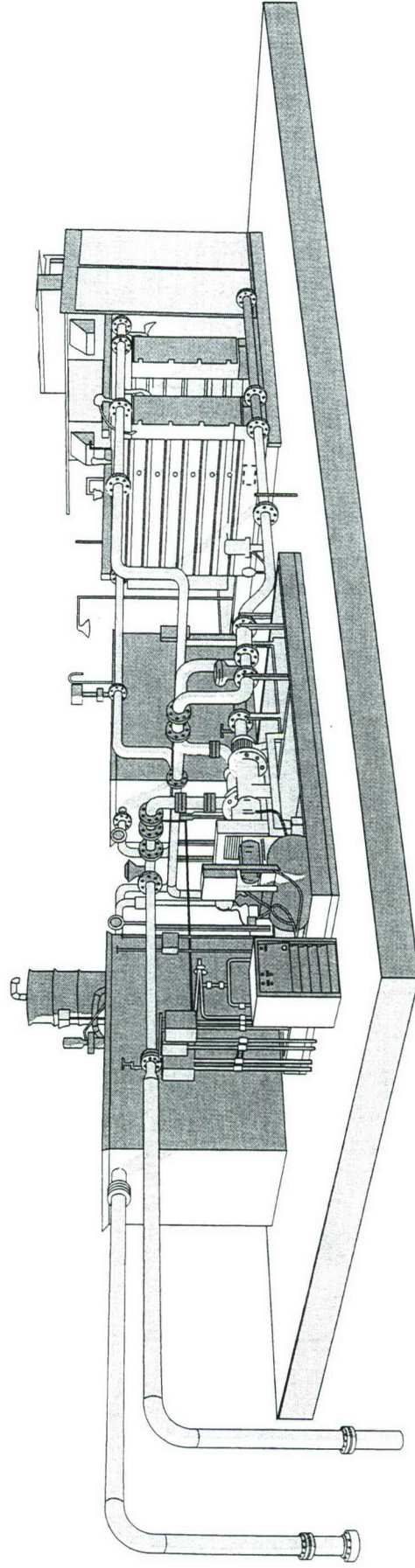
PROJECT NO. 24-150036-C01

PLOT PLAN AND ELEVATION VIEW
LOT 3 SPARGE TEST
SACRAMENTO ARMY DEPOT

PLATE

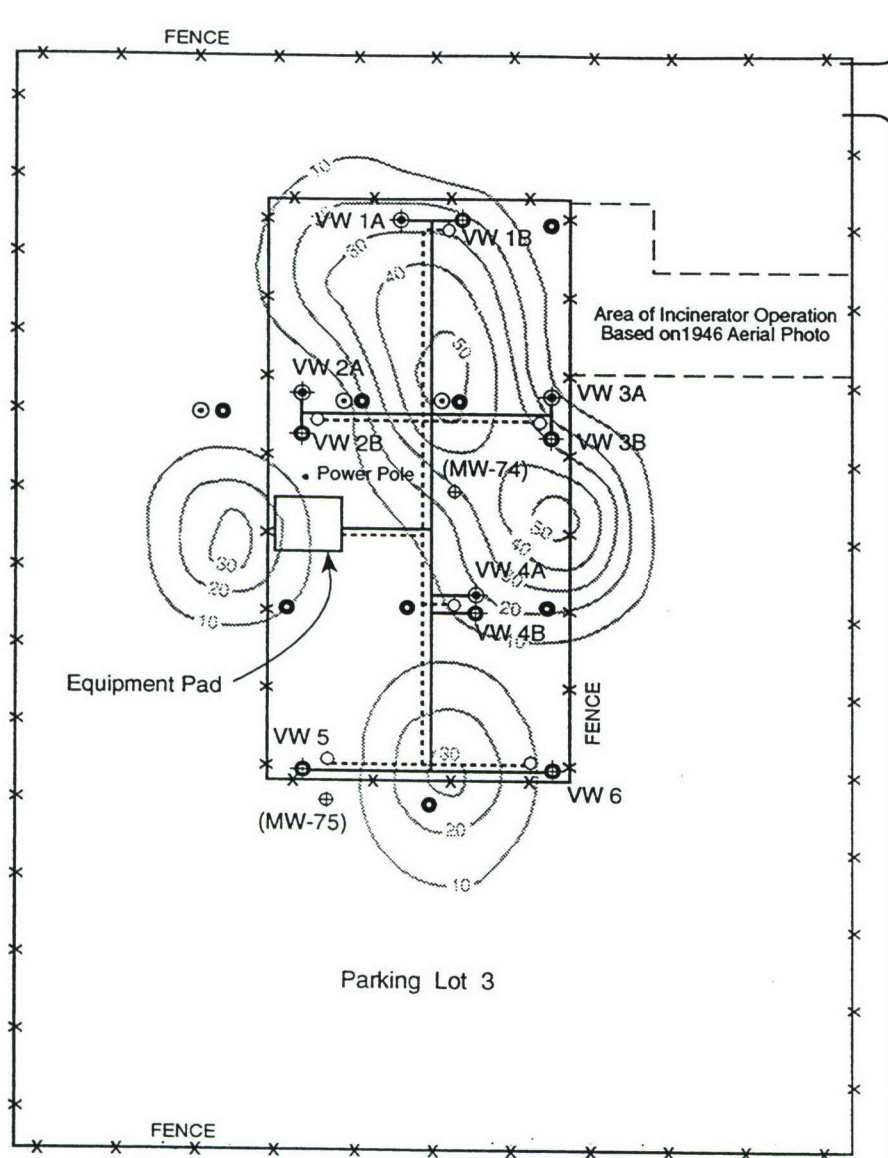
15

Groundwater Treatment System



 KLEINFELDER

Plates: TCE Parking Lot 3 Pilot Test



APPROXIMATE SCALE IN FEET: 1" = 60'



LEGEND

- ⊕ Shallow Vent Well Location
- ⊕ Deep Vent Well Location
- ⊙ Shallow Pressure Probe Location
- Deep Pressure Probe Location
- ⊕ Monitoring Well Location
- TCE Isocontour (Soil Gas Probe Investigation)

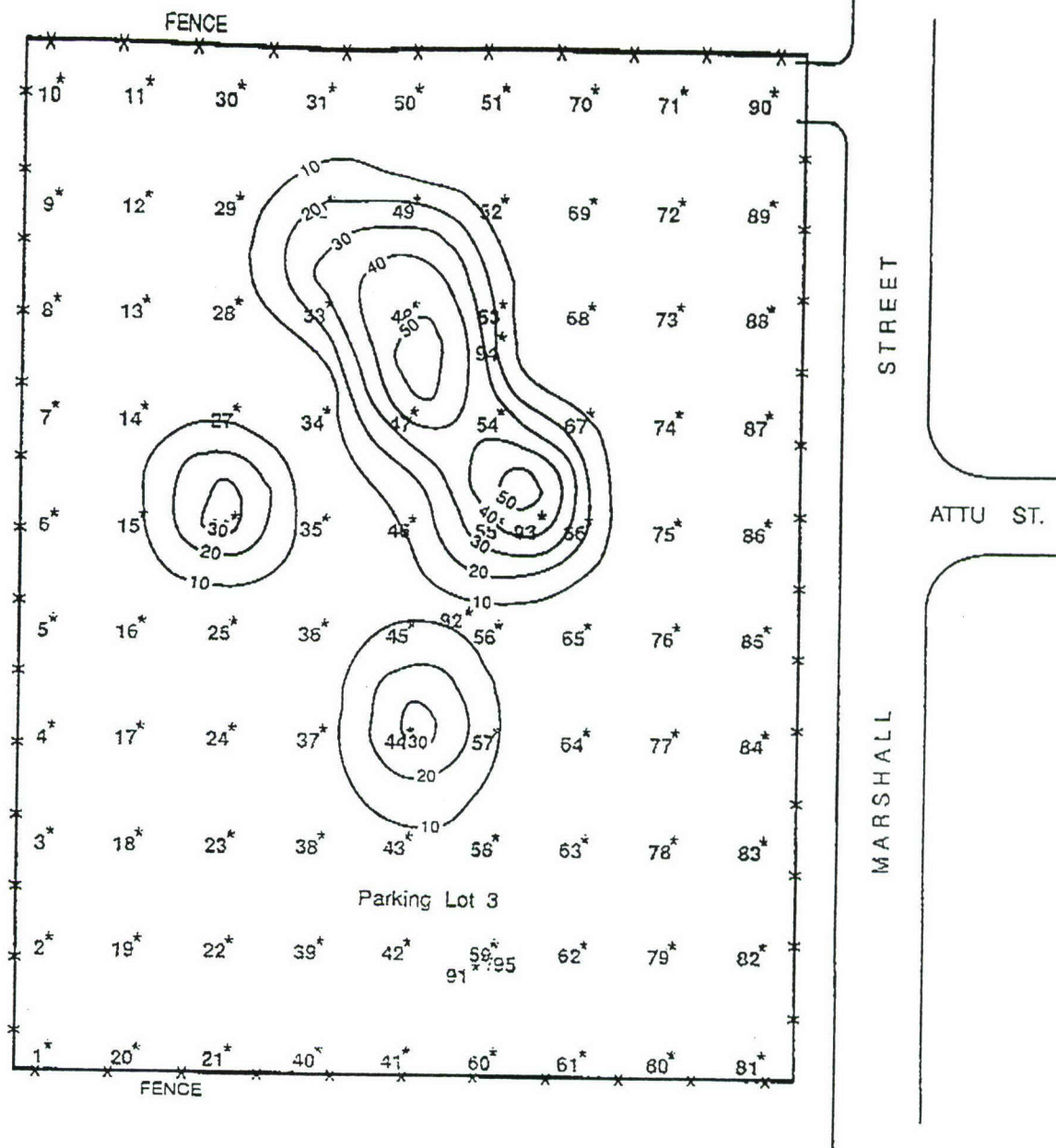
KH KLEINFELDER

DATE PRODUCED: 5/26/93 | DATE REVISED: 6/3/94
PROJECT NO. 24-150036-G06

VENT WELL INSTALLATION
LOCATIONS RELATIVE TO
SOIL GAS RESULTS AND
PARKING LOT 3 FENCING
SACRAMENTO ARMY DEPOT

PLATE

B-5



LEGEND

15 * Soil Gas Sample Location

—20— TCE Isoconcentration Contour
(10 ppbv Intervals)

KH KLEINFELDER

DATE PRODUCED: 5/27/93 DATE REVISED:

PROJECT NO. 24-150036-B10

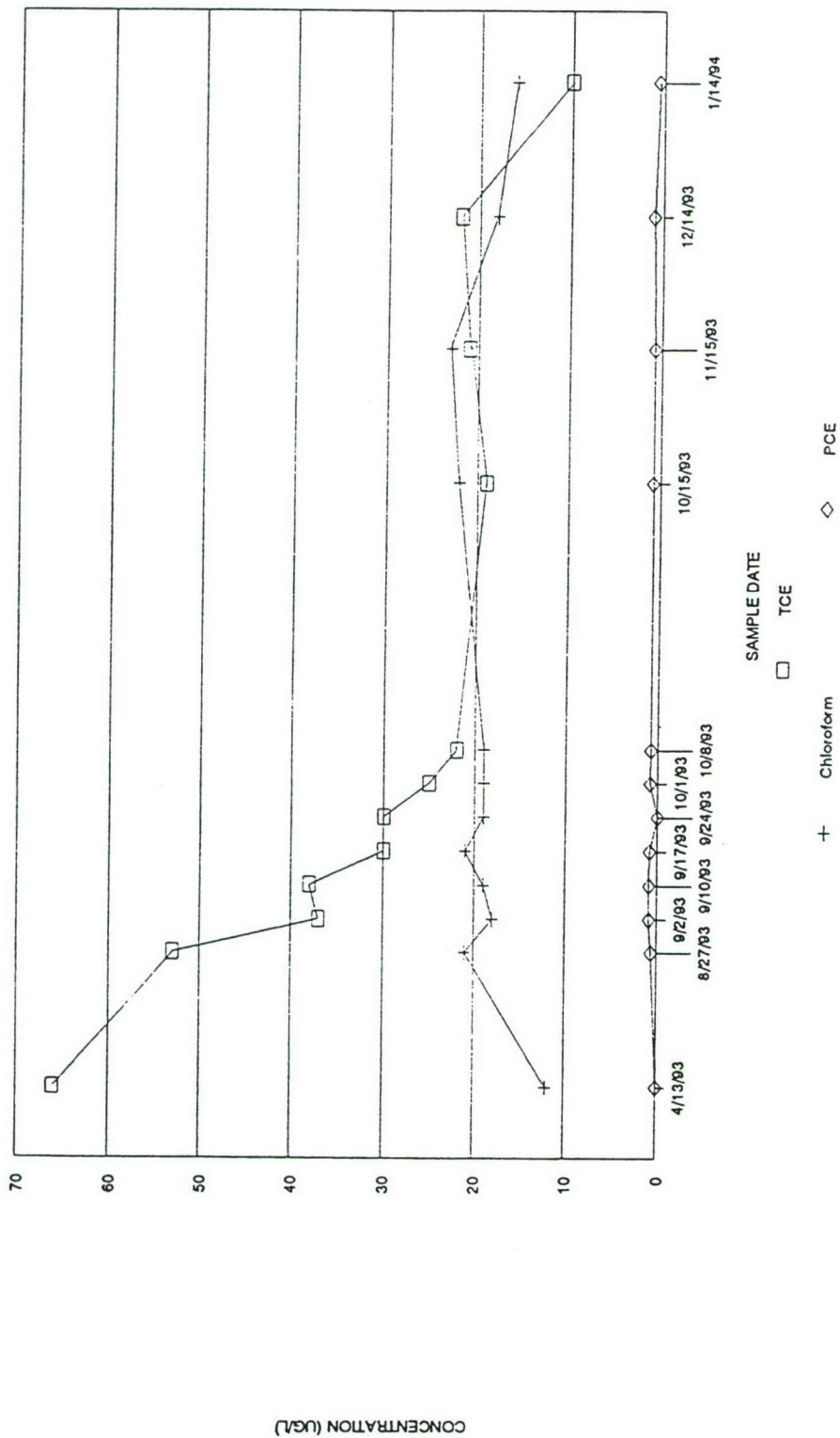
SOIL GAS SAMPLE LOCATION AND
TCE ISOCONCENTRATION CONTOUR MAP
PARKING LOT 3
SACRAMENTO ARMY DEPOT

PLATE

2

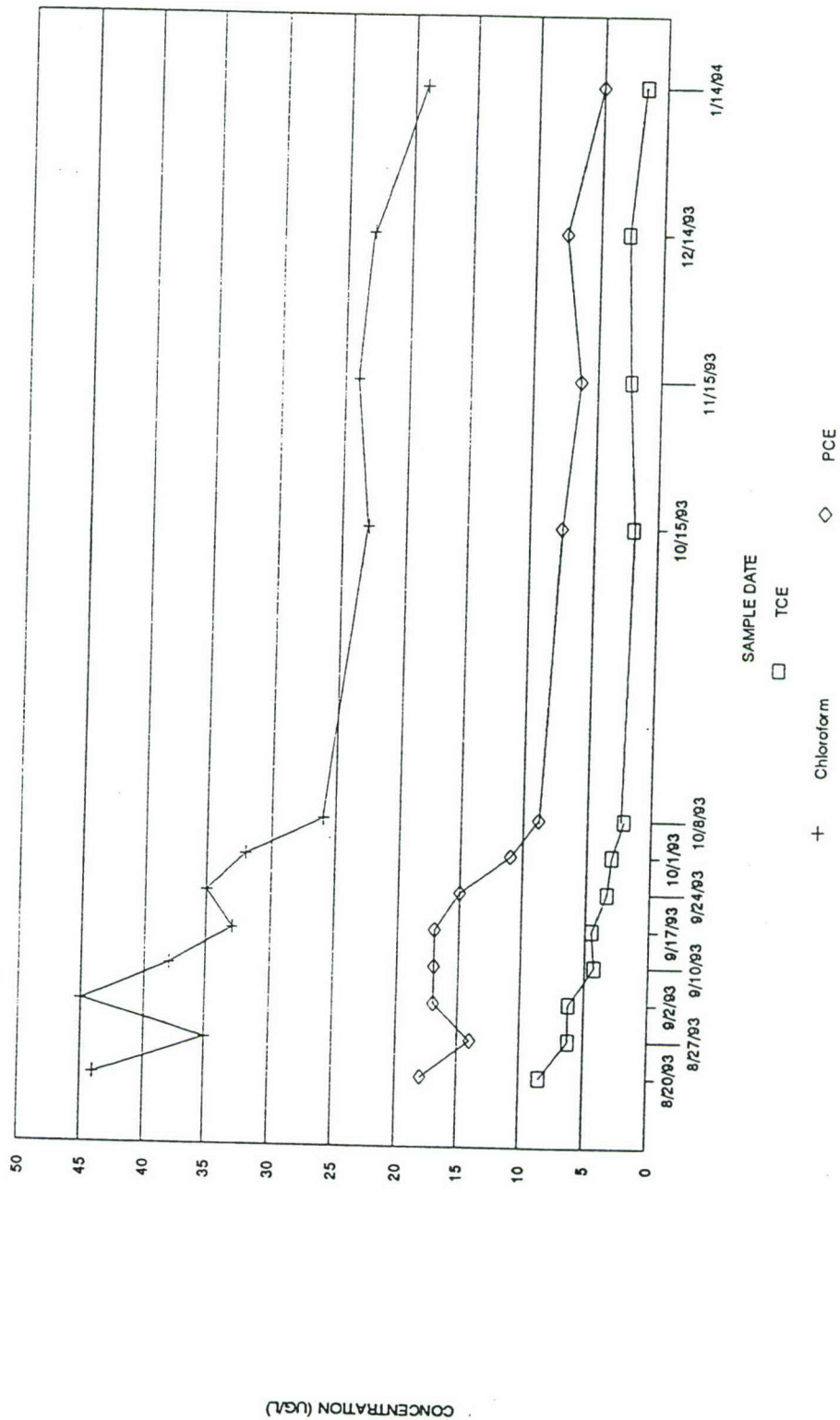
MONITORING WELL MW-73

PARKING LOT 3 AIR SPARGING PILOT TEST



MONITORING WELL MW-74

PARKING LOT 3 AIR SPARGING PILOT TEST



MONITORING WELL MW-75

PARKING LOT 3 AIR SPARGING PILOT TEST

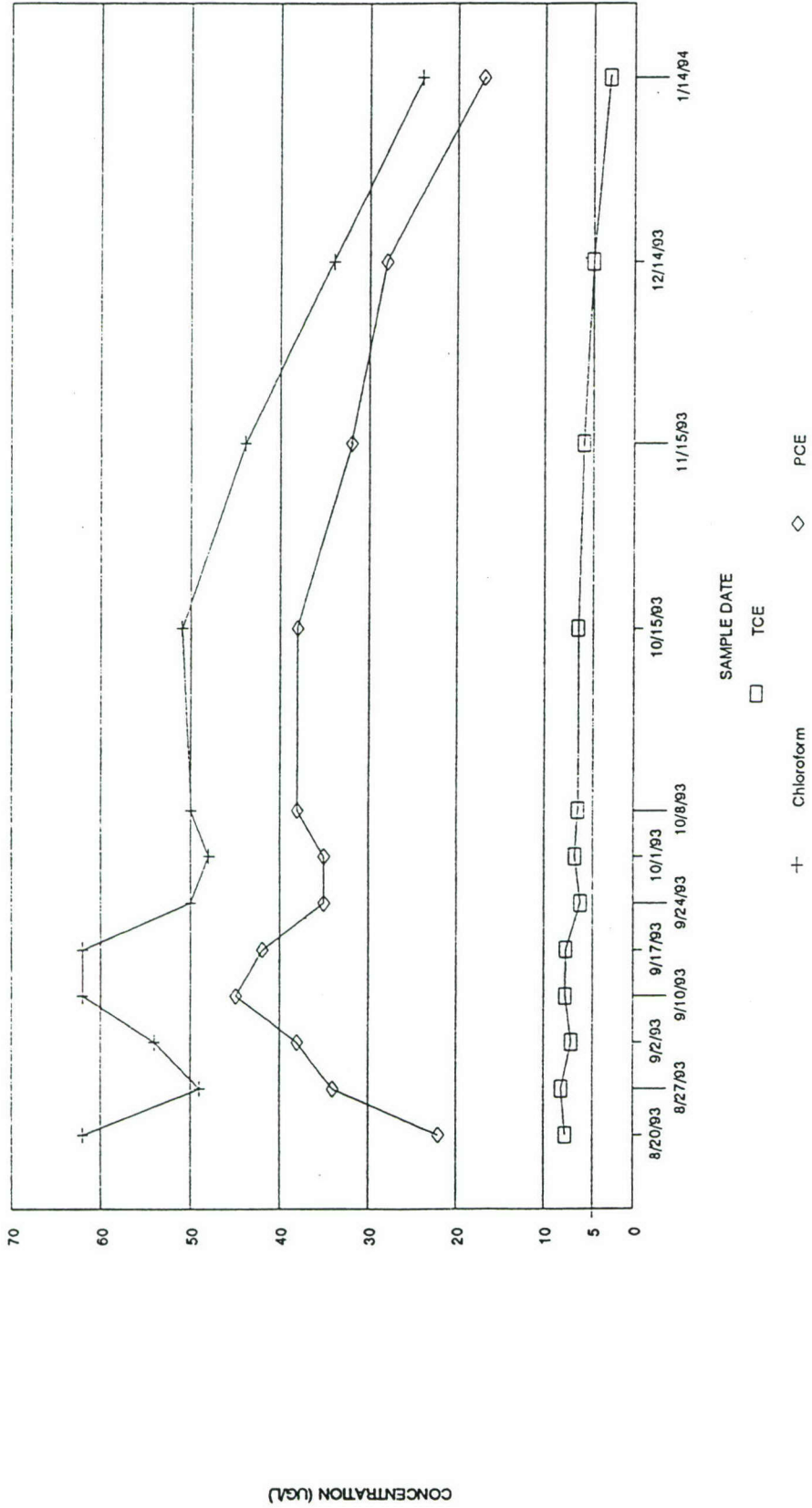
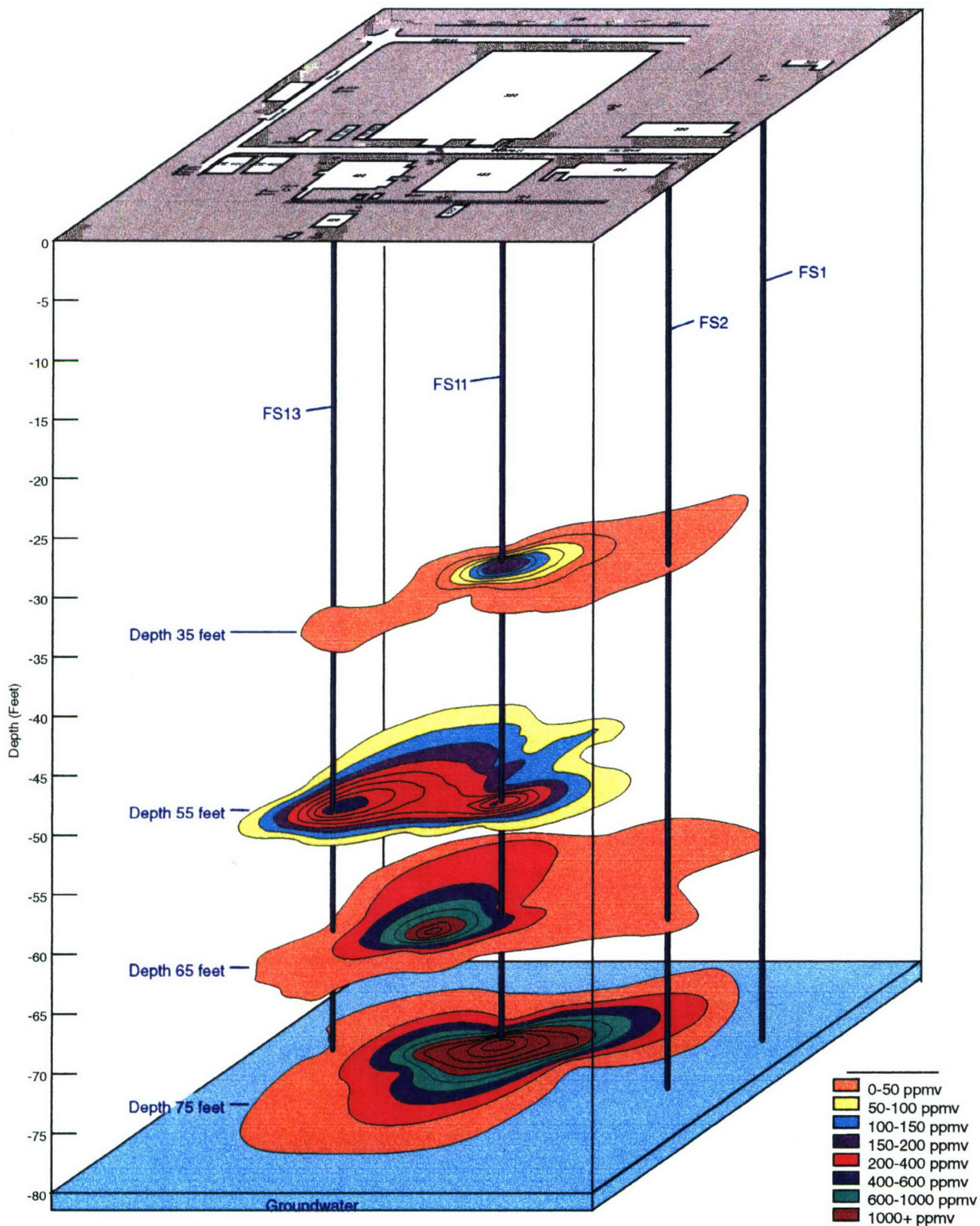




Plate: Freon 113 Isoconcentrations in Zones



KH KLEINFELDER

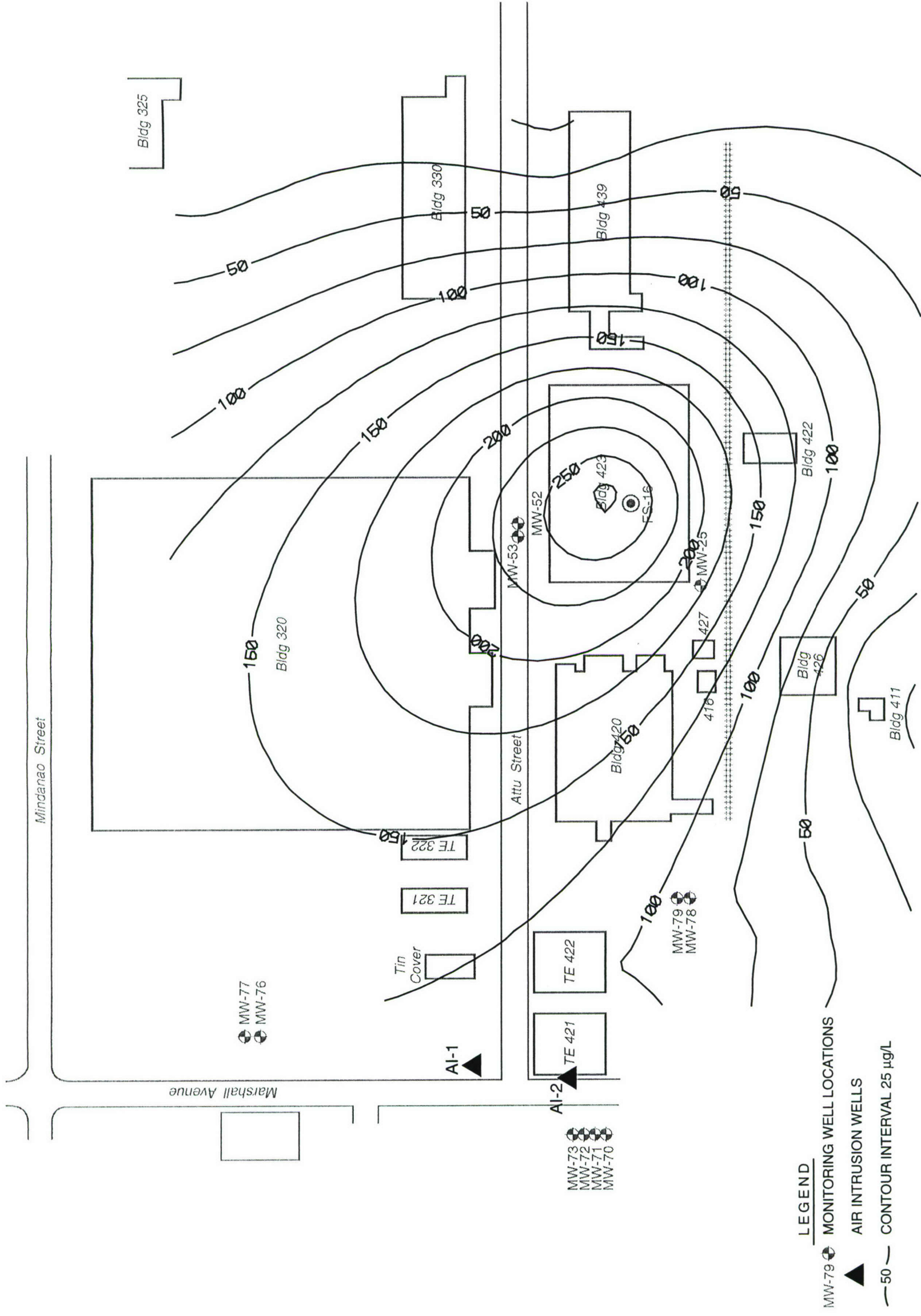
DATE PRODUCED: 11/22/93 DATE REVISED:
PROJECT NO. 24-220178-A00

FREON 113 SOIL GAS
ISOCONCENTRATION PLOT
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

1





APPROXIMATE SCALE IN FEET: 1" = 100'



NOTE: Refer to Freon 113 technical memoranda on field activities for discussion of data results.

PLATE

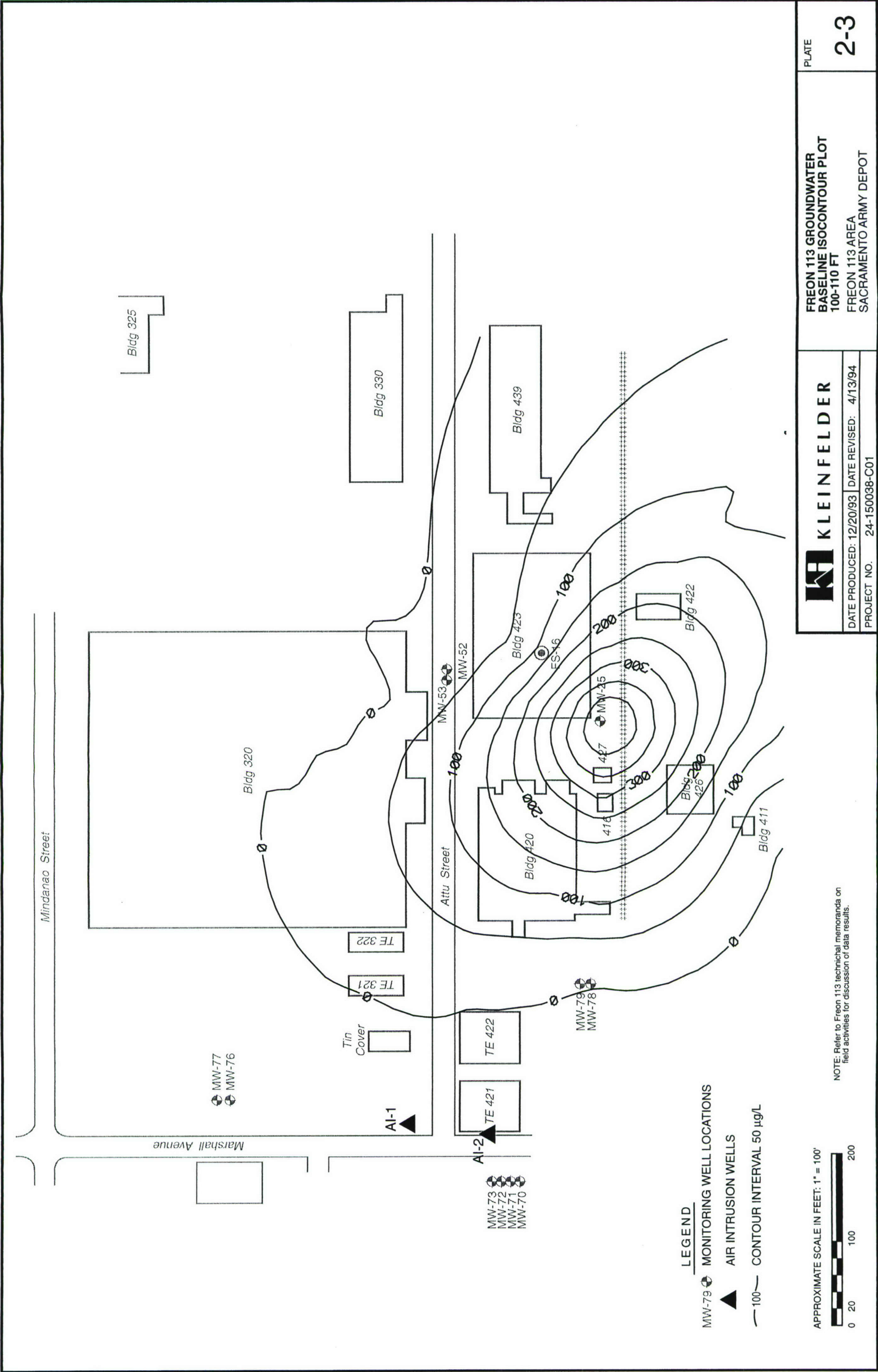
**FREON 113 GROUNDWATER
BASELINE ISOCONTOUR PLOT
85-91 FT**

KLEINFELDER

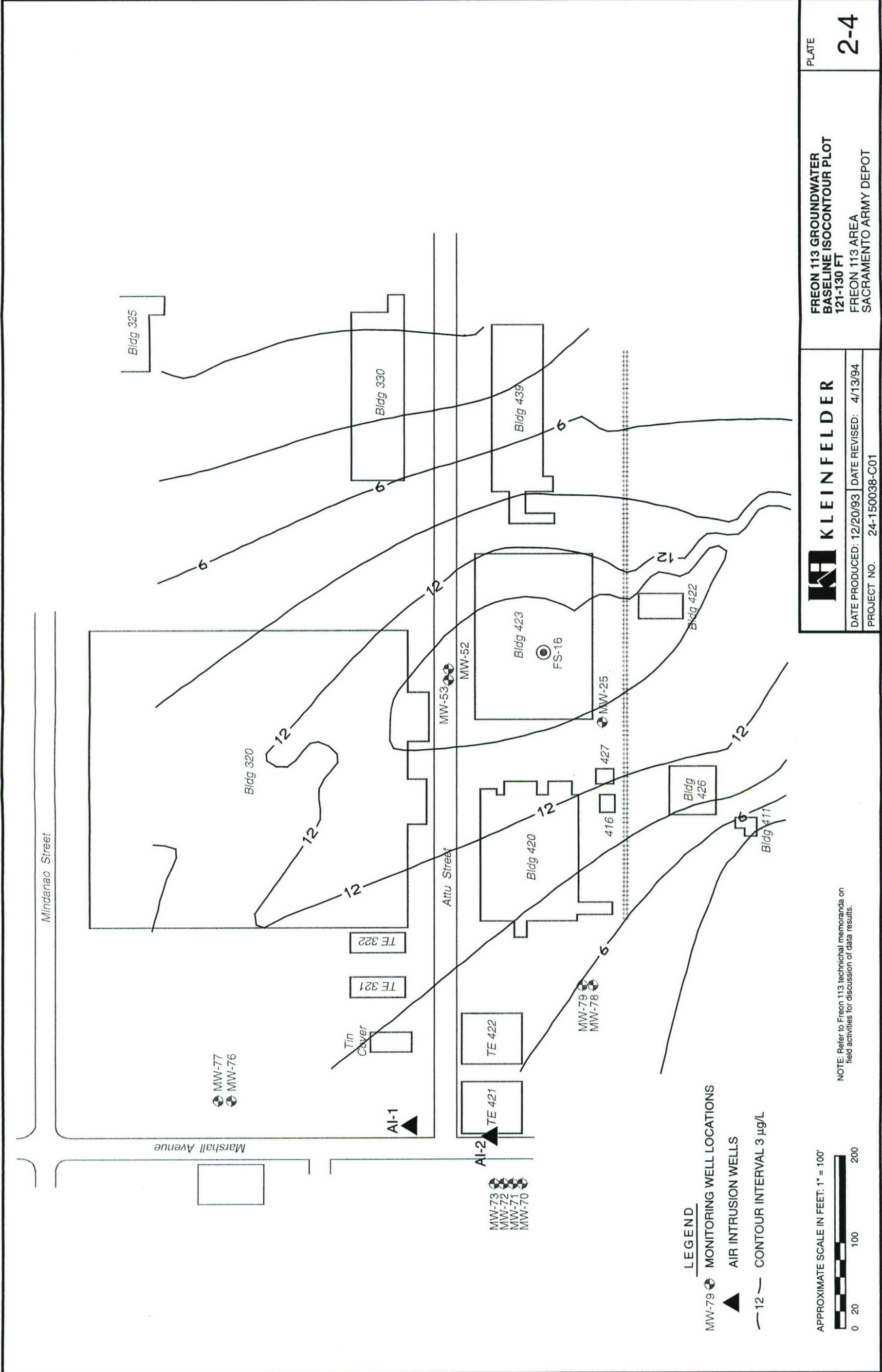
DATE PRODUCED: 12/20/93	DATE REVISED: 4/13/94
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PROJECT NO.	24-150038-C01
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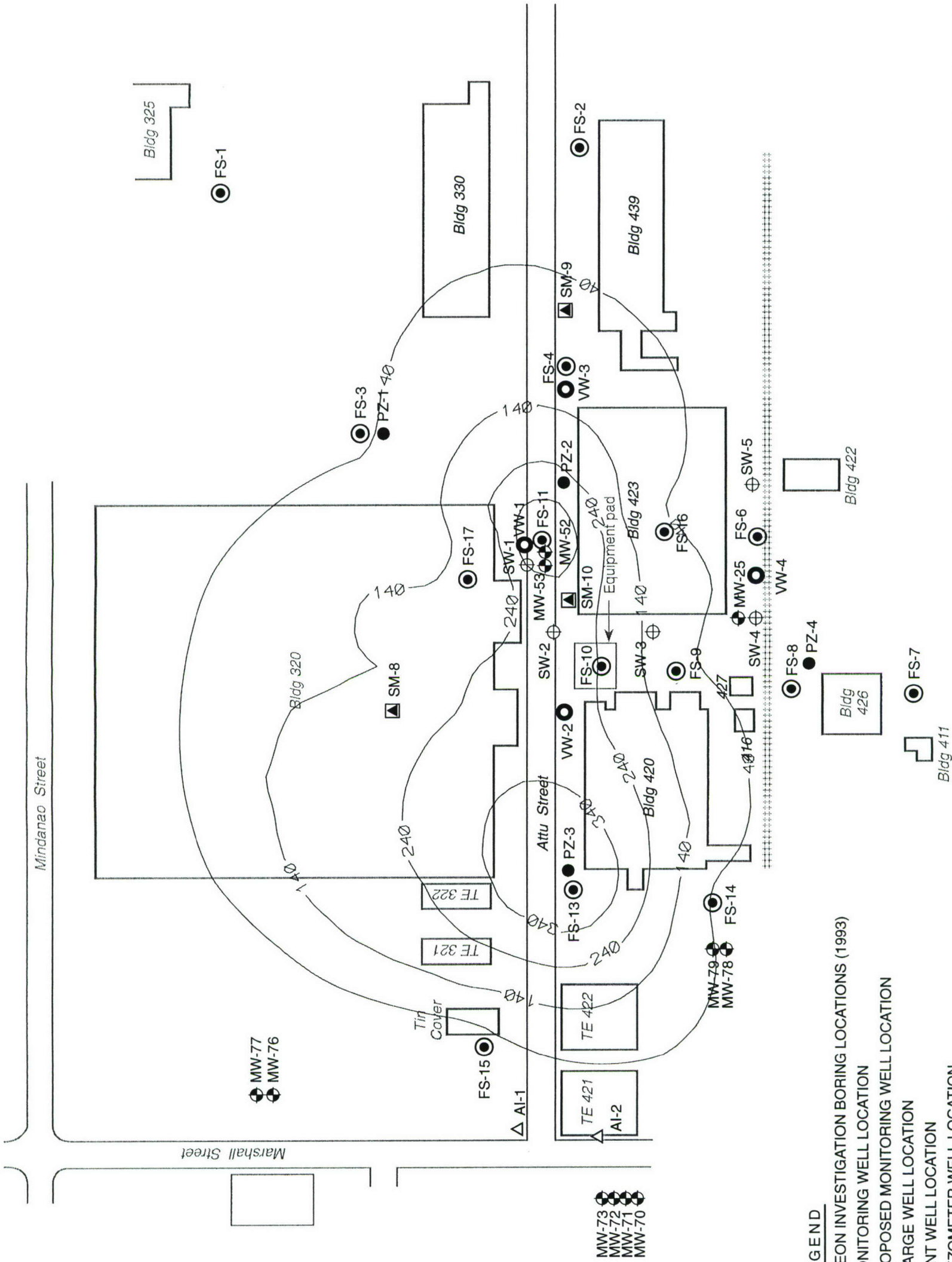
2-2









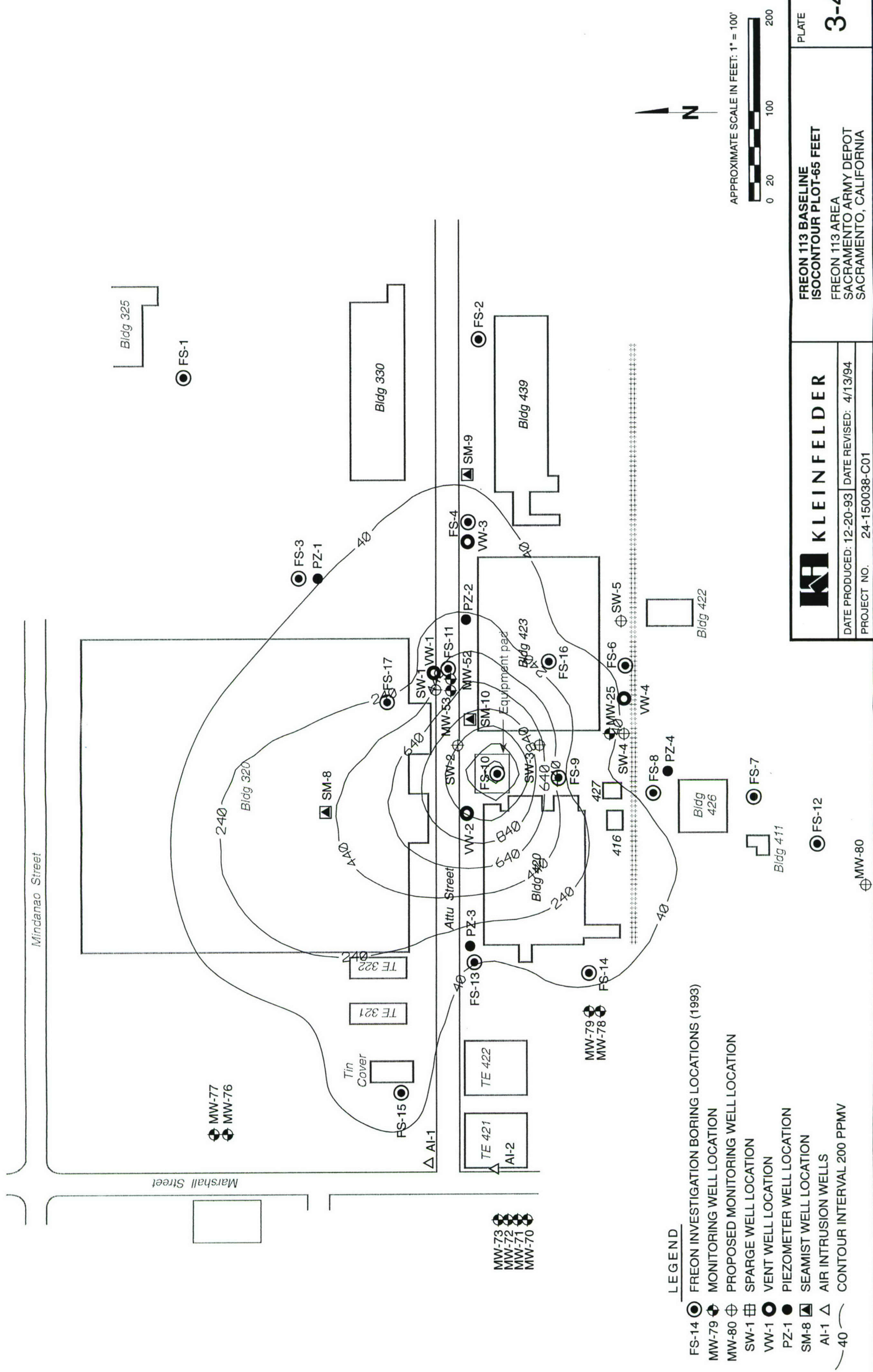


- LEGEND**
- FS-14 ● FREON INVESTIGATION BORING LOCATIONS (1993)
 - MW-79 ⊕ MONITORING WELL LOCATION
 - MW-80 ⊕ PROPOSED MONITORING WELL LOCATION
 - SW-1 ⊕ SPARGE WELL LOCATION
 - VW-1 ● VENT WELL LOCATION
 - PZ-1 ● PIEZOMETER WELL LOCATION
 - SM-8 ▴ SEAMIST WELL LOCATION
 - AI-1 △ AIR INTRUSION WELLS
 - 40— CONTOUR INTERVAL 100 PPMV

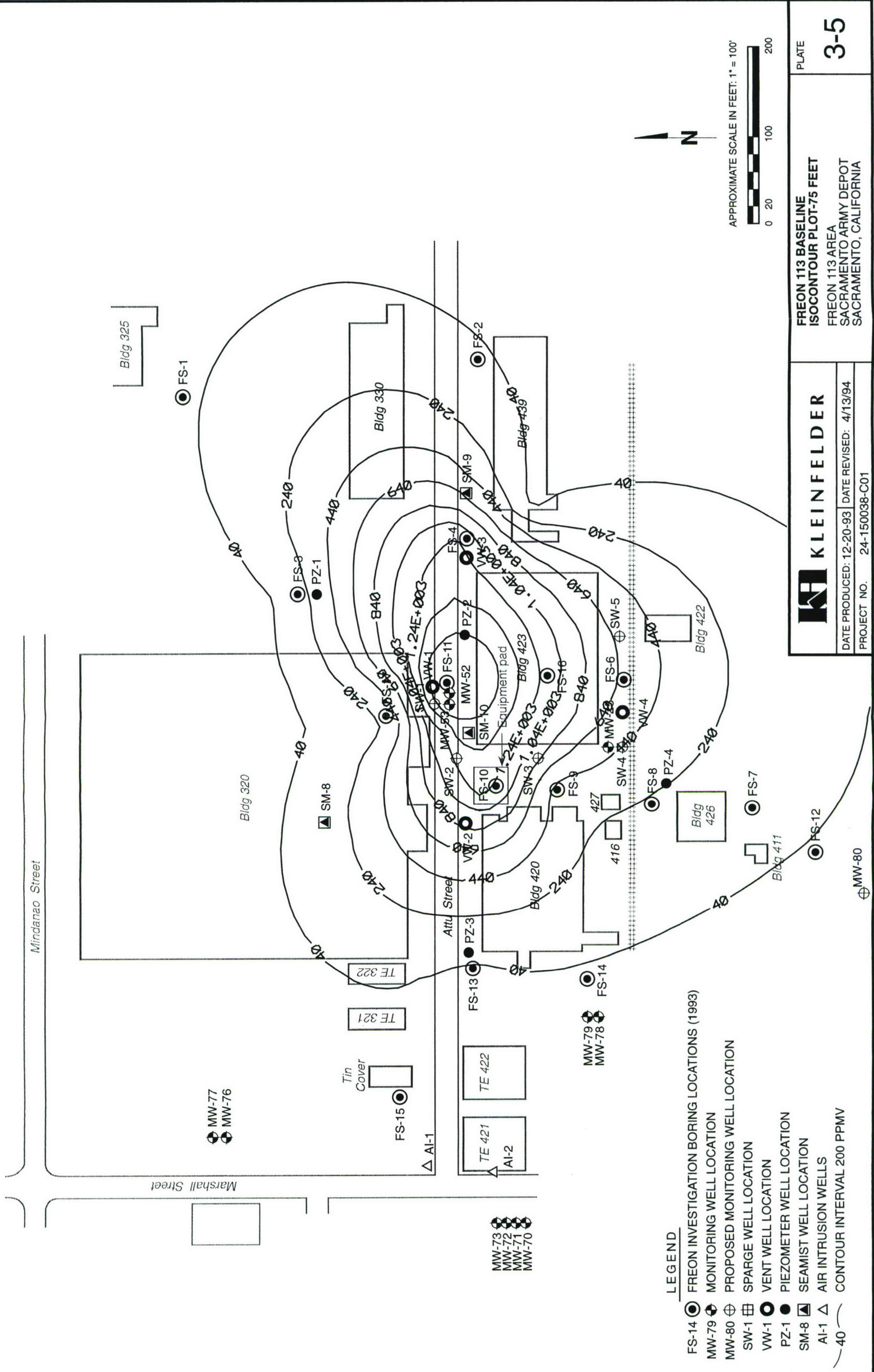


KLEINFELDER		FREON 113 ISOCONTOUR PLOT-55 FEET BASELINE FREON 113 AREA		PLATE
DATE PRODUCED: 12-20-93	DATE REVISED: 4/13/94	SACRAMENTO ARMY DEPOT SACRAMENTO, CALIFORNIA		
PROJECT NO.	24-150038-C01	3-3		





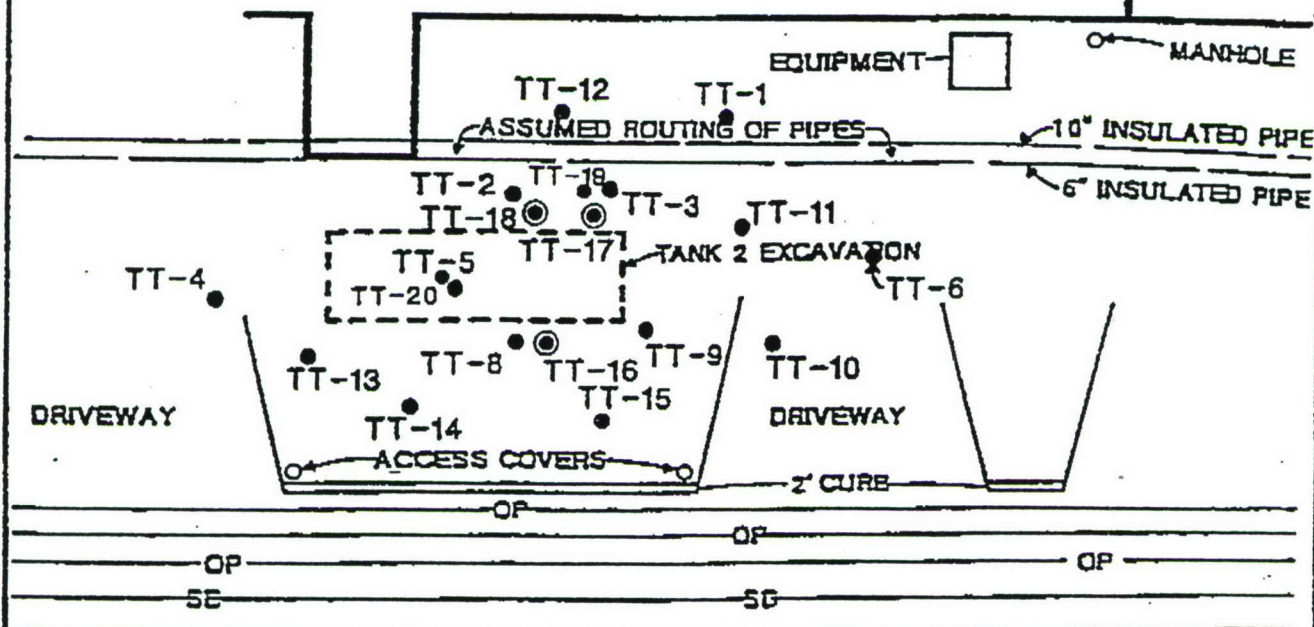






Plates: Tank 2

BUILDING #320

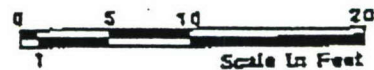


ATTU STREET

TT-7

LEGEND

- BORING LOCATION
- ⊙ TREATABILITY STUDY BORING LOCATION
- OP OVERHEAD POWER LINES
- SD STORM DRAIN (UNDERGROUND)



APPROXIMATE SCALE 1"=10'

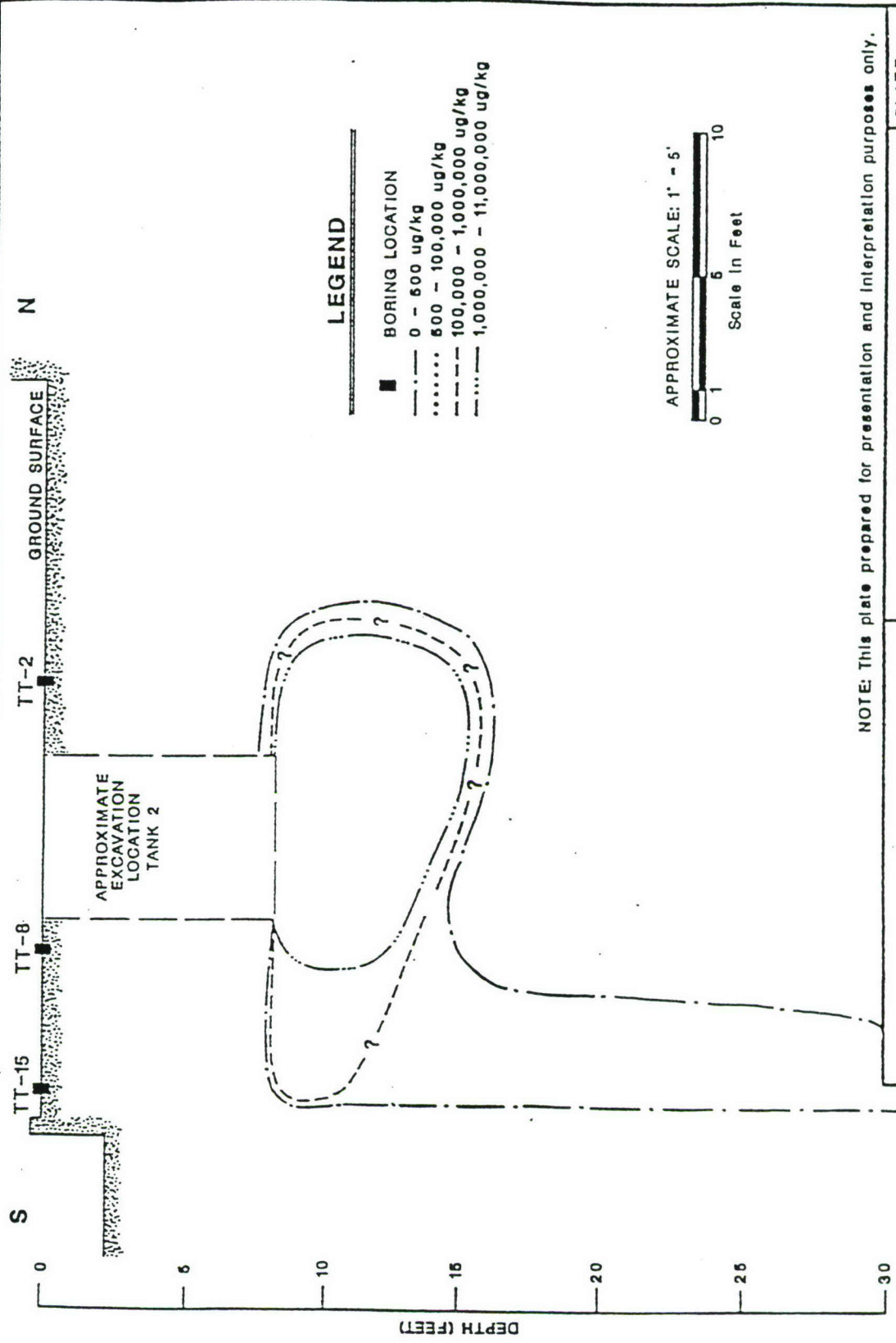
KH KLEINFELDER

PROJECT NO. 24-150002-B02

TANK 2
BORING LOCATION MAP
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

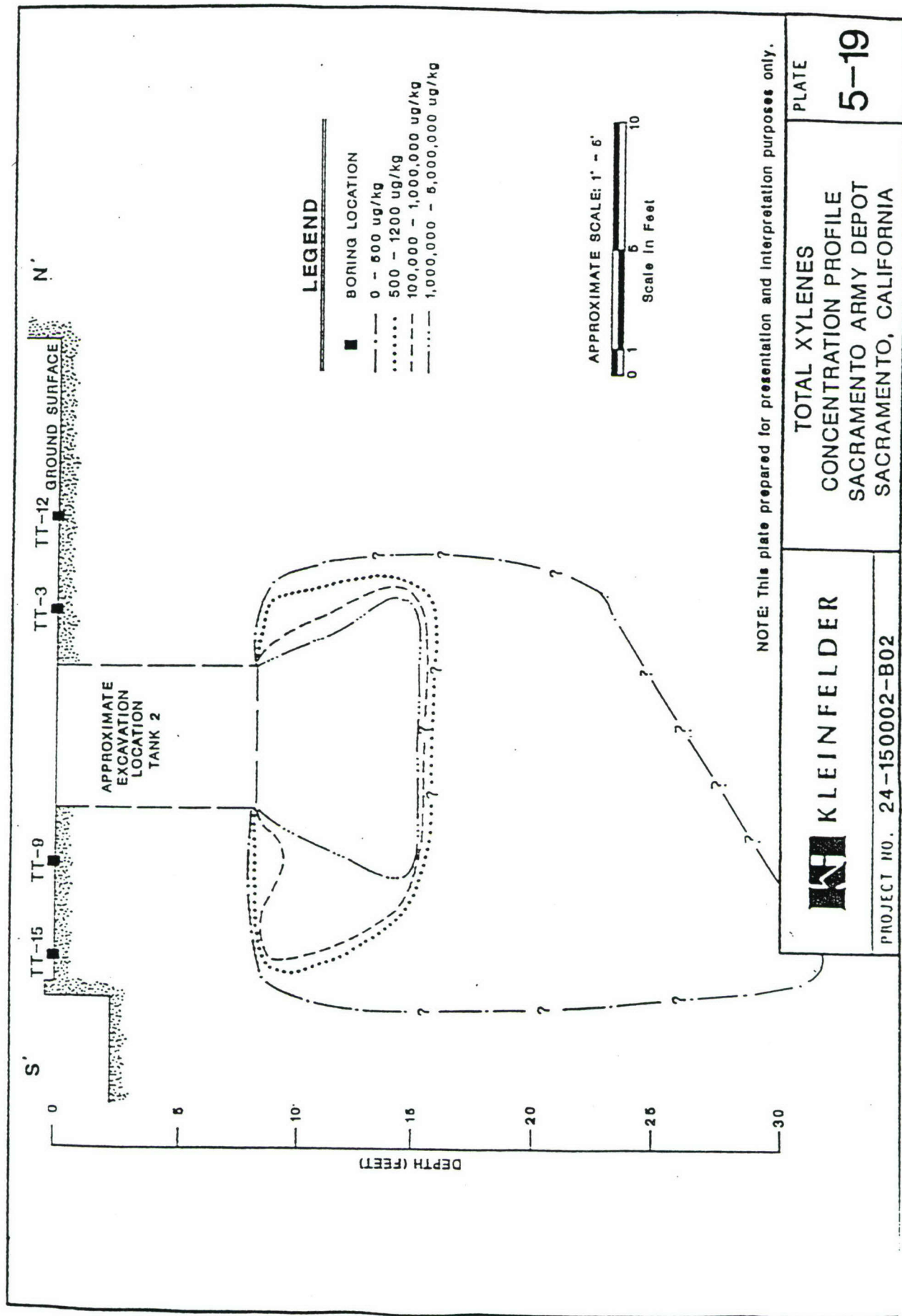
PLATE

4-1



NOTE: This plate prepared for presentation and interpretation purposes only.

 KLEINFELDER	PROJECT NO. 24-150002-B02
TOTAL XYLENES CONCENTRATION PROFILE SACRAMENTO ARMY DEPOT SACRAMENTO, CALIFORNIA	PLATE 5-18



N

GROUND SURFACE

TT-2

TT-8

TT-15

S

APPROXIMATE
EXCAVATION
LOCATION
TANK 2

LEGEND

- BORING LOCATION
- 0 - 100 ug/kg
- 100 - 100,000 ug/kg
- 100,000 - 2,300,000 ug/kg

APPROXIMATE SCALE: 1" = 5'
0 1 5 10
Scale in Feet

DEPTH (FEET)

NOTE: This plate prepared for presentation and interpretation purposes only.

PLATE

5-20

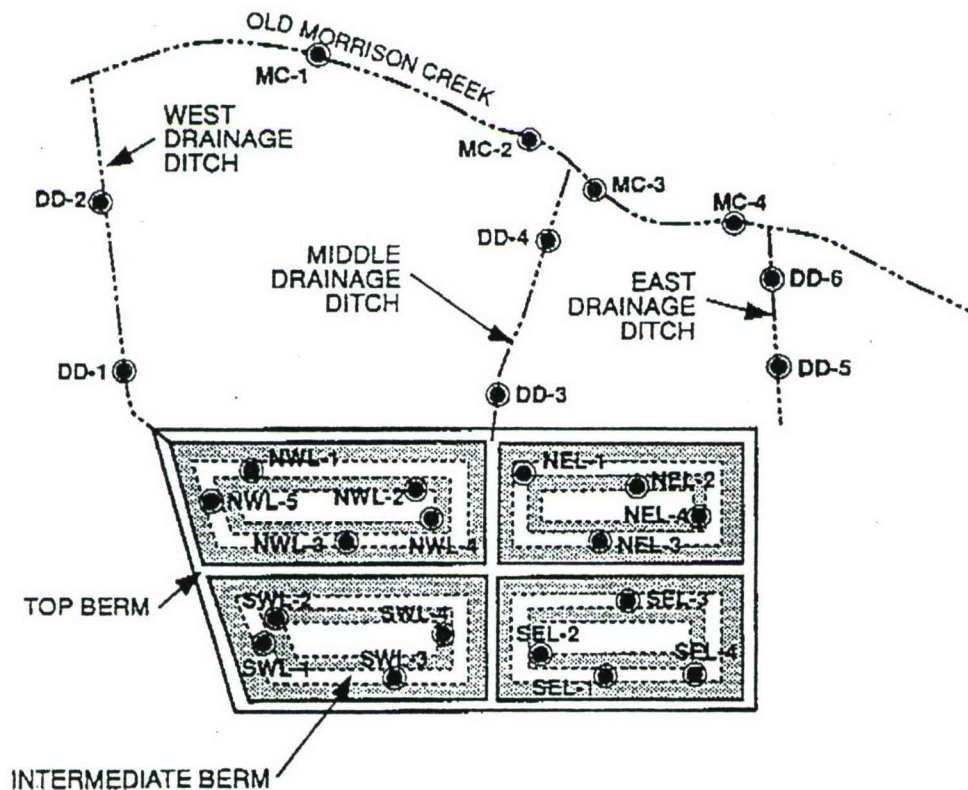
ETHYLBENZENE
CONCENTRATION PROFILE
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



KLEINFELDER

PROJECT NO. 24-150002-B02

Plates: Oxidation Lagoons



APPROXIMATE SCALE: 1" = 200'

0 20 100 200 400

Scale in Feet

LEGEND

- APPROXIMATE BORING LOCATION
- ▨ SLOPING SURFACE OF LAGOON BASIN

KH KLEINFELDER

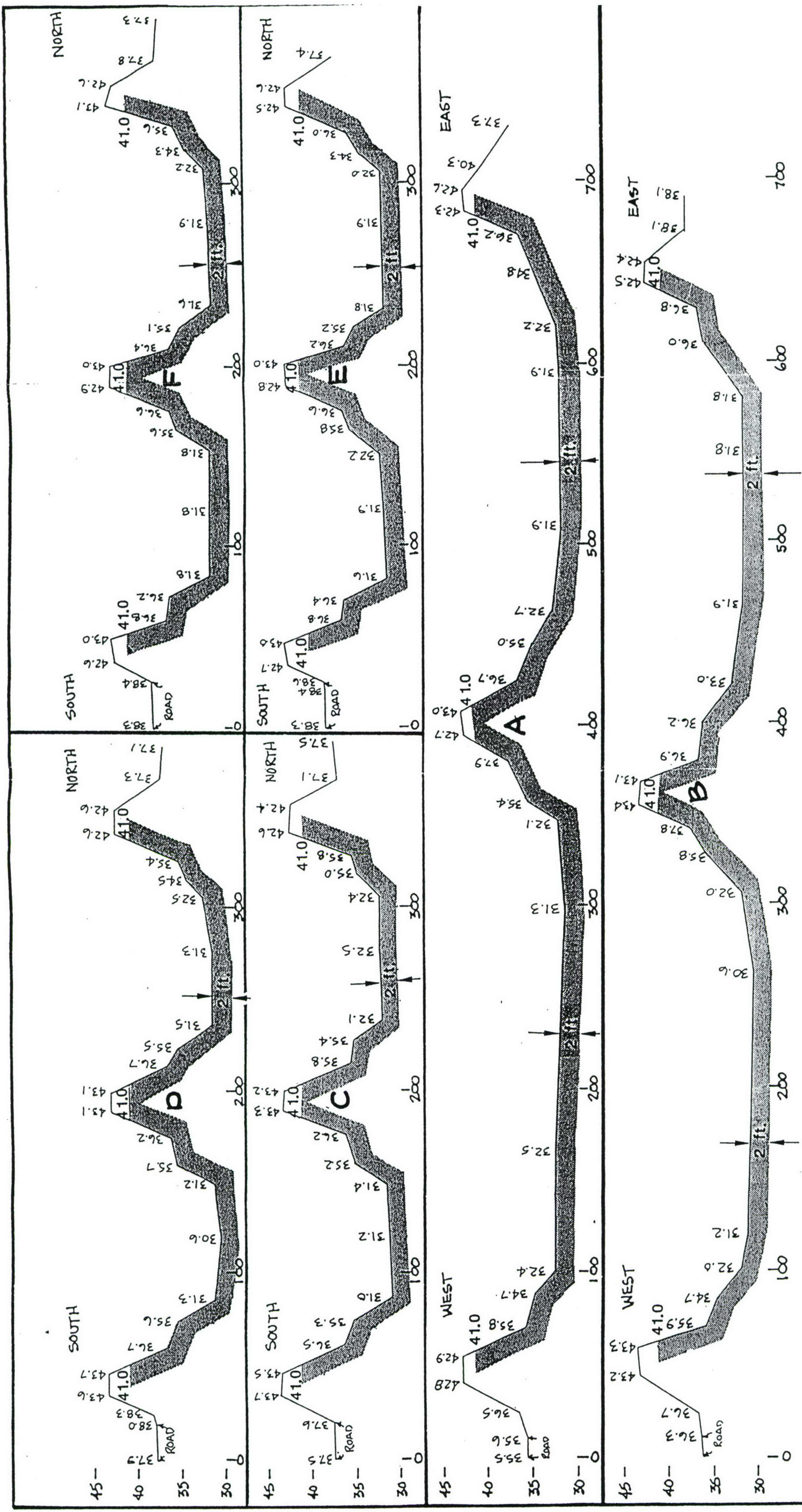
PROJECT NO. 24-150002-F03

BORING LOCATION MAP
OXIDATION LAGOONS,
DRAINAGE DITCHES
& OLD MORRISON CREEK
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

4-1





HORIZONTAL SCALE: 1" = 50'
 VERTICAL SCALE: 1" = 10'

AFFECTED SOIL
 (APPROXIMATELY 2 FOOT DEPTH)

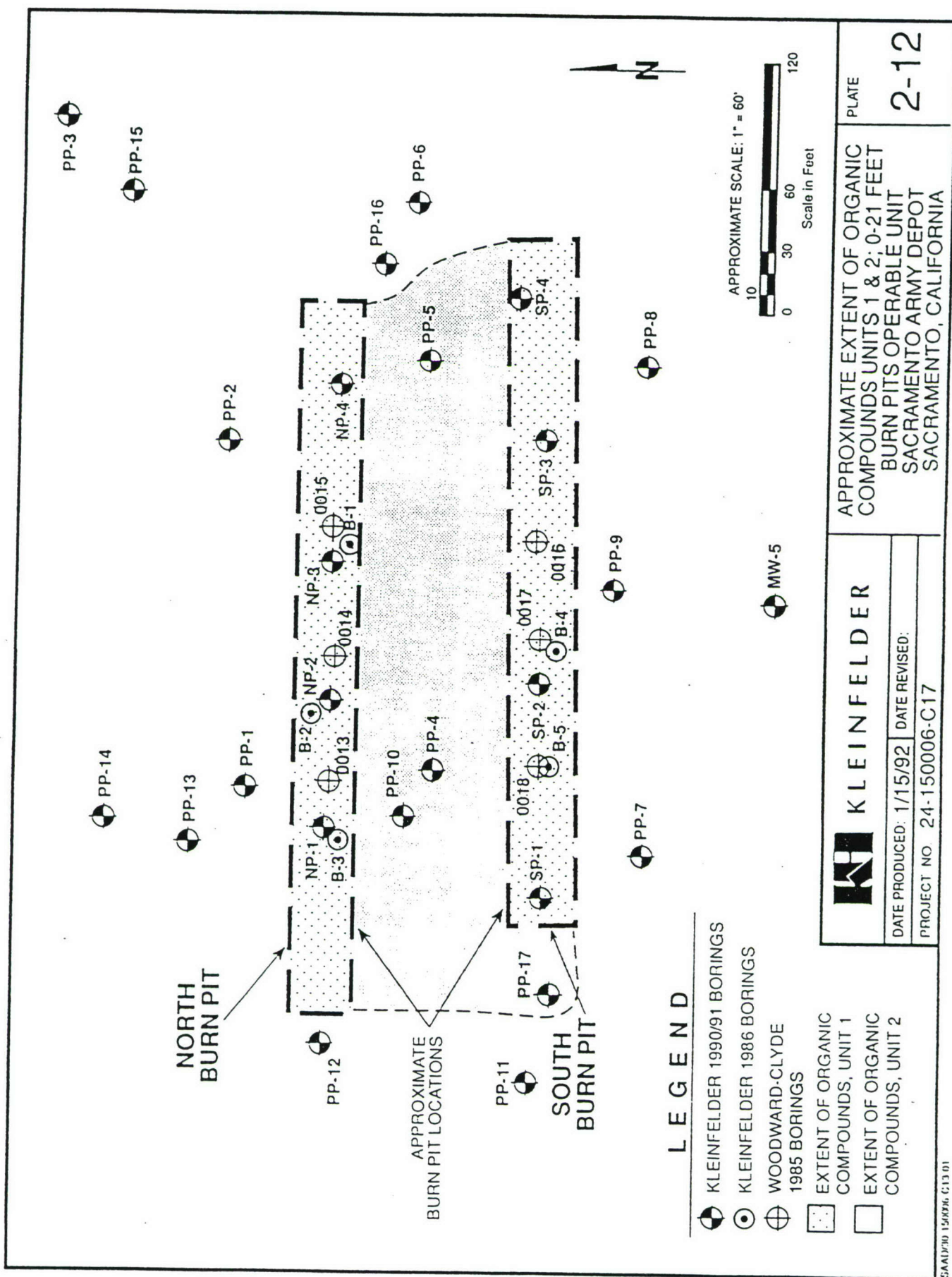
OXIDATION LAGOON CROSS SECTIONS
 SACRAMENTO ARMY DEPOT

6-10-91

TOM J. MORROW, INC.
 500 WETLAND BLVD. STE A
 WEST SACRAMENTO, CA 95605-2198
 (916) 572-8124

FIGURE
 2-9a

Plates: Burn Pits



PP-3

PP-15

PP-2

PP-16

PP-6

PP-5

PP-8

PP-9

PP-7

MW-5

PP-14

PP-13

PP-1

NP-1

PP-12

NP-2

NP-3

NP-4

PP-10

PP-4

PP-11

SP-1

SP-2

SP-3


SP-4

NORTH
BURN PIT

APPROXIMATE
BURN PIT
LOCATIONS

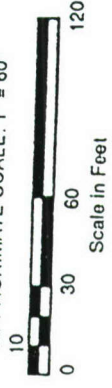
SOUTH
BURN PIT

LEGEND

-  KLEINFELDER 1990/91 BORINGS
-  EXTENT OF ORGANIC COMPOUNDS

MW-5 Monitoring Well Shown for Location Reference

APPROXIMATE SCALE: 1" = 60'



PLATE

2-13

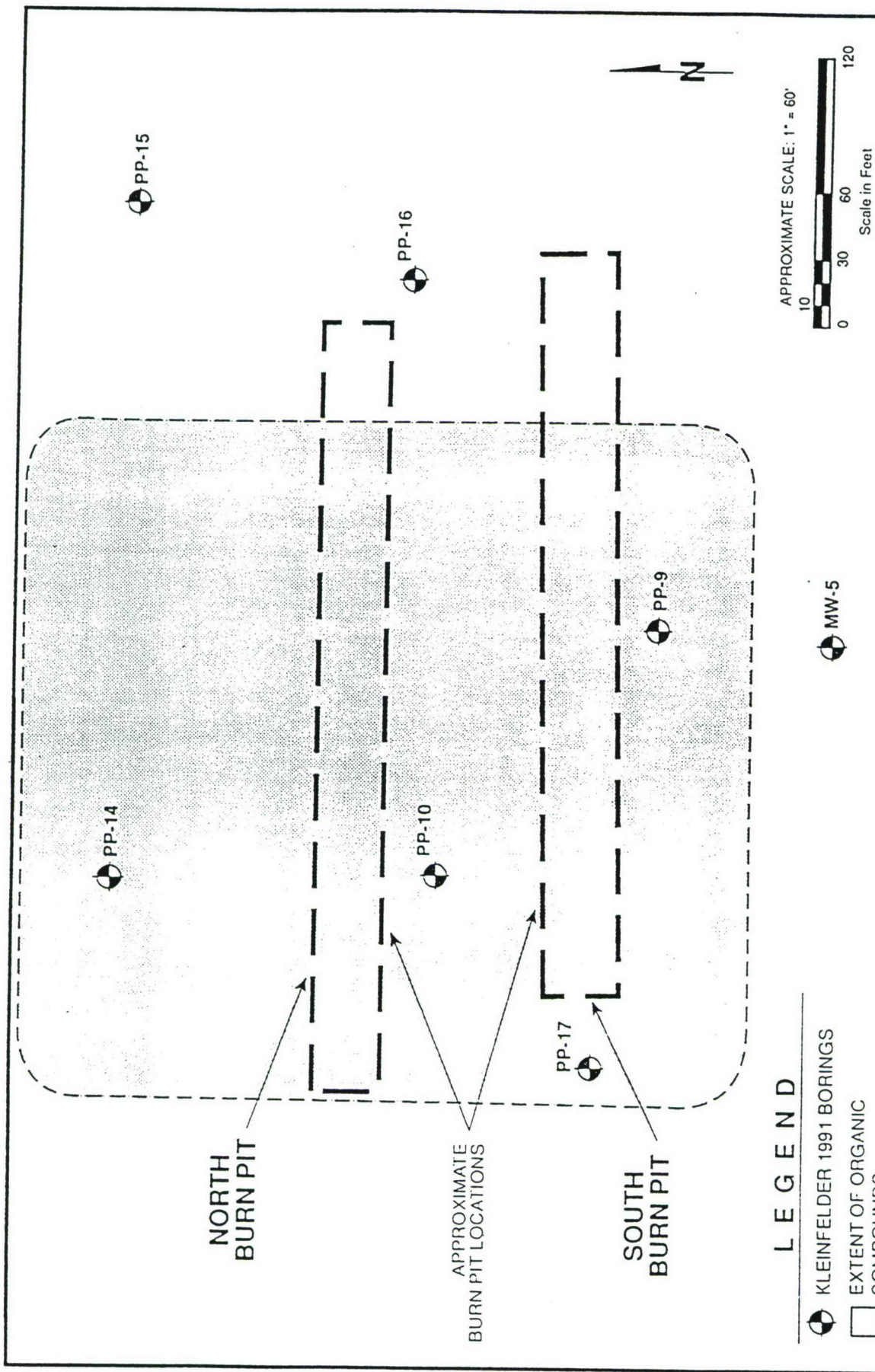
APPROXIMATE EXTENT OF ORGANIC
COMPOUNDS UNIT 3: 21 TO 41 FEET
BURN PITS OPERABLE UNIT
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



KLEINFELDER

DATE PRODUCED: 1/15/92 DATE REVISED:


PROJECT NO 24-150006-C17

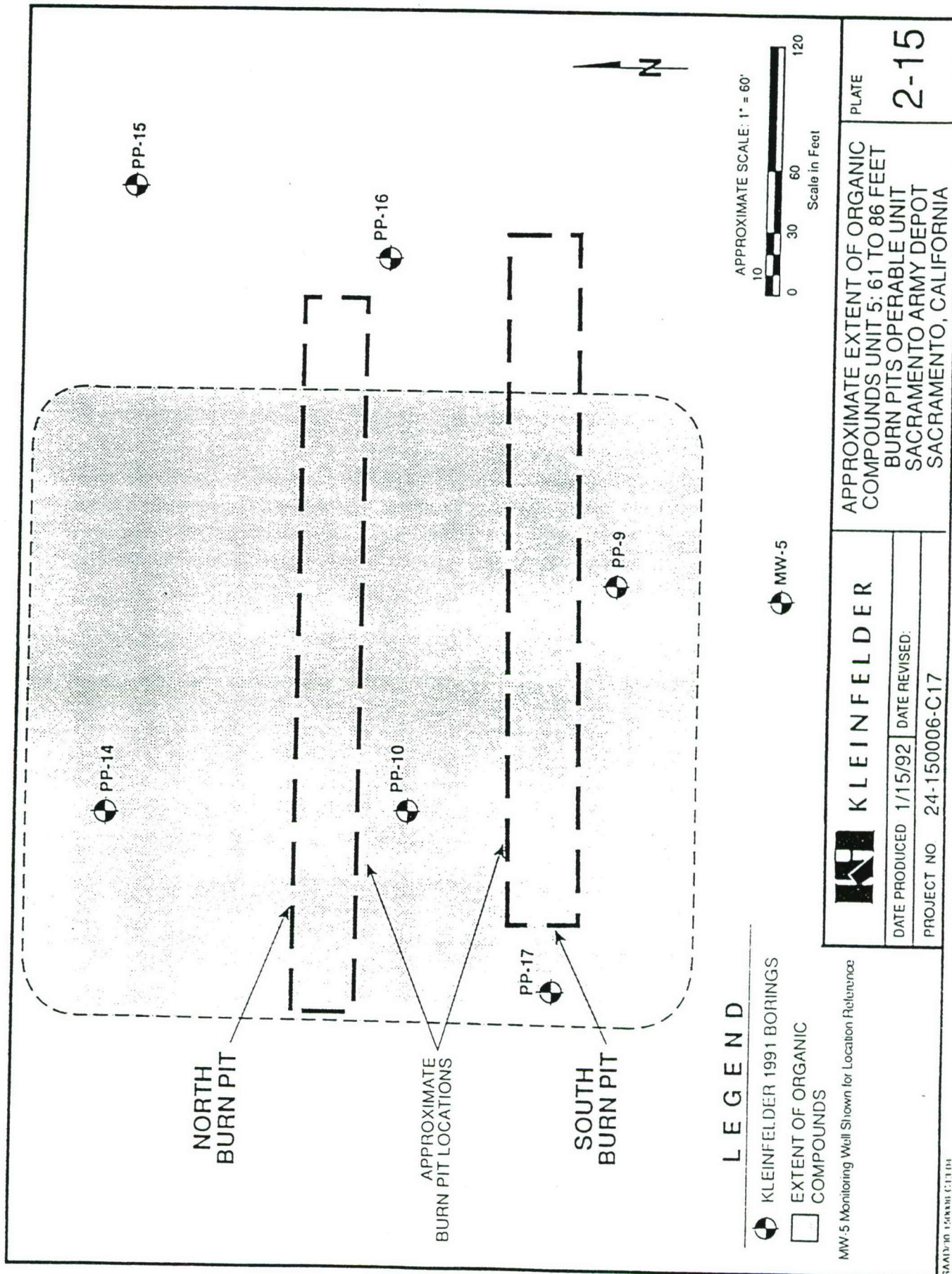


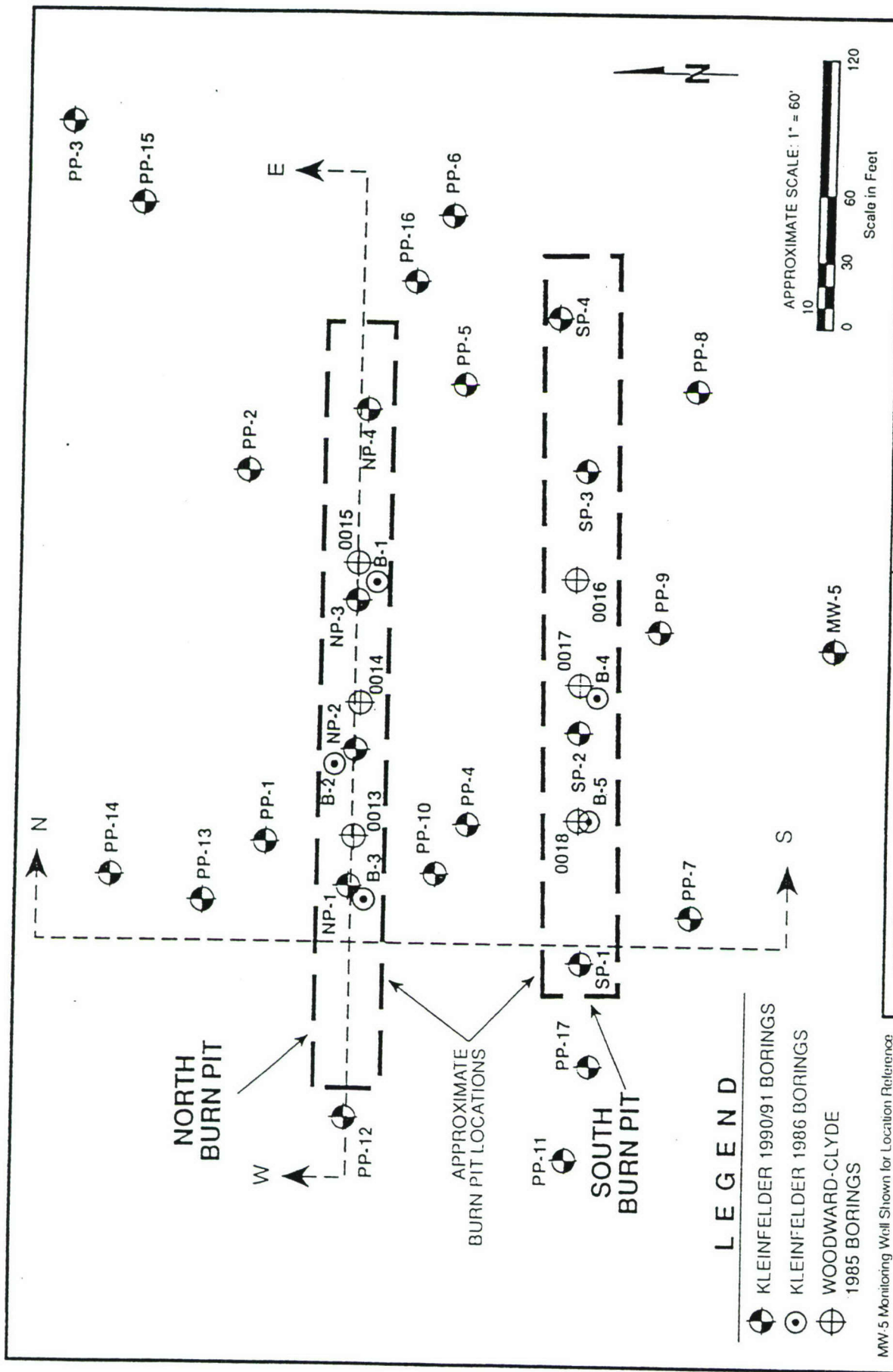
LEGEND

- KLEINFELDER 1991 BORINGS
- EXTENT OF ORGANIC COMPOUNDS

MW 5 Monitoring Well Shown for Location Reference

 KLEINFELDER		APPROXIMATE EXTENT OF ORGANIC COMPOUNDS UNIT 4: 41 TO 61 FEET BURN PITS OPERABLE UNIT SACRAMENTO ARMY DEPOT SACRAMENTO, CALIFORNIA		PLATE 2-14
DATE PRODUCED: 1/15/92	DATE REVISED:			
PROJECT NO 24-150006-C17				





PLATE

CROSS SECTION LOCATION MAP
BURN PITS OPERABLE UNIT
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

2-16

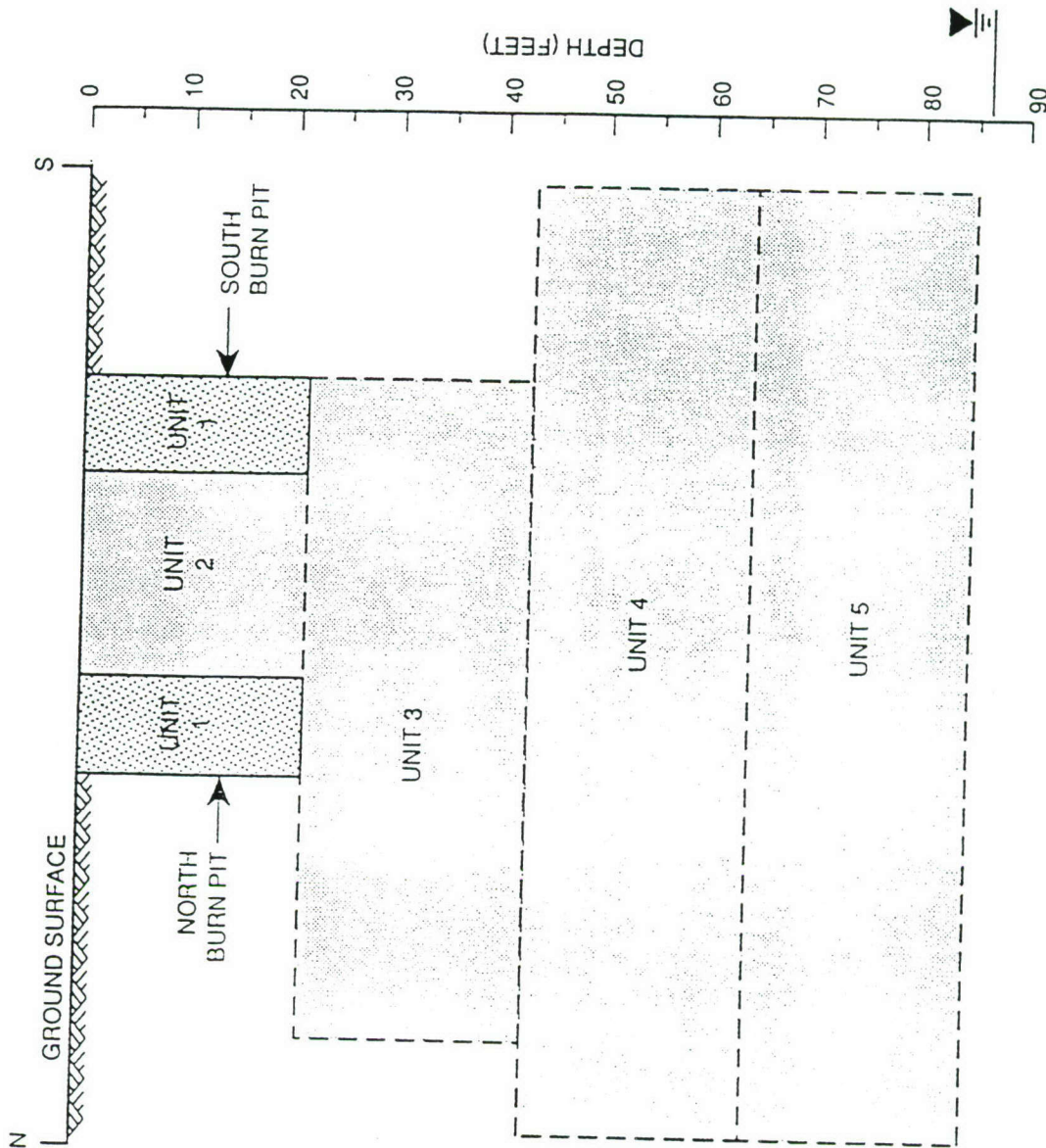
MW 5 Monitoring Well Shown for Location Reference



KLEINFELDER

DATE PRODUCED: 1/15/92 DATE REVISED:

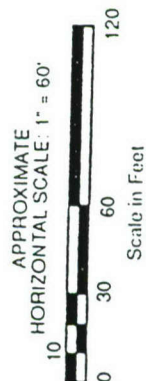
PROJECT NO 24-150006-C17



LEGEND

APPROXIMATE
AREA
OF CONTAMINATION

GROUND WATER



PLATE

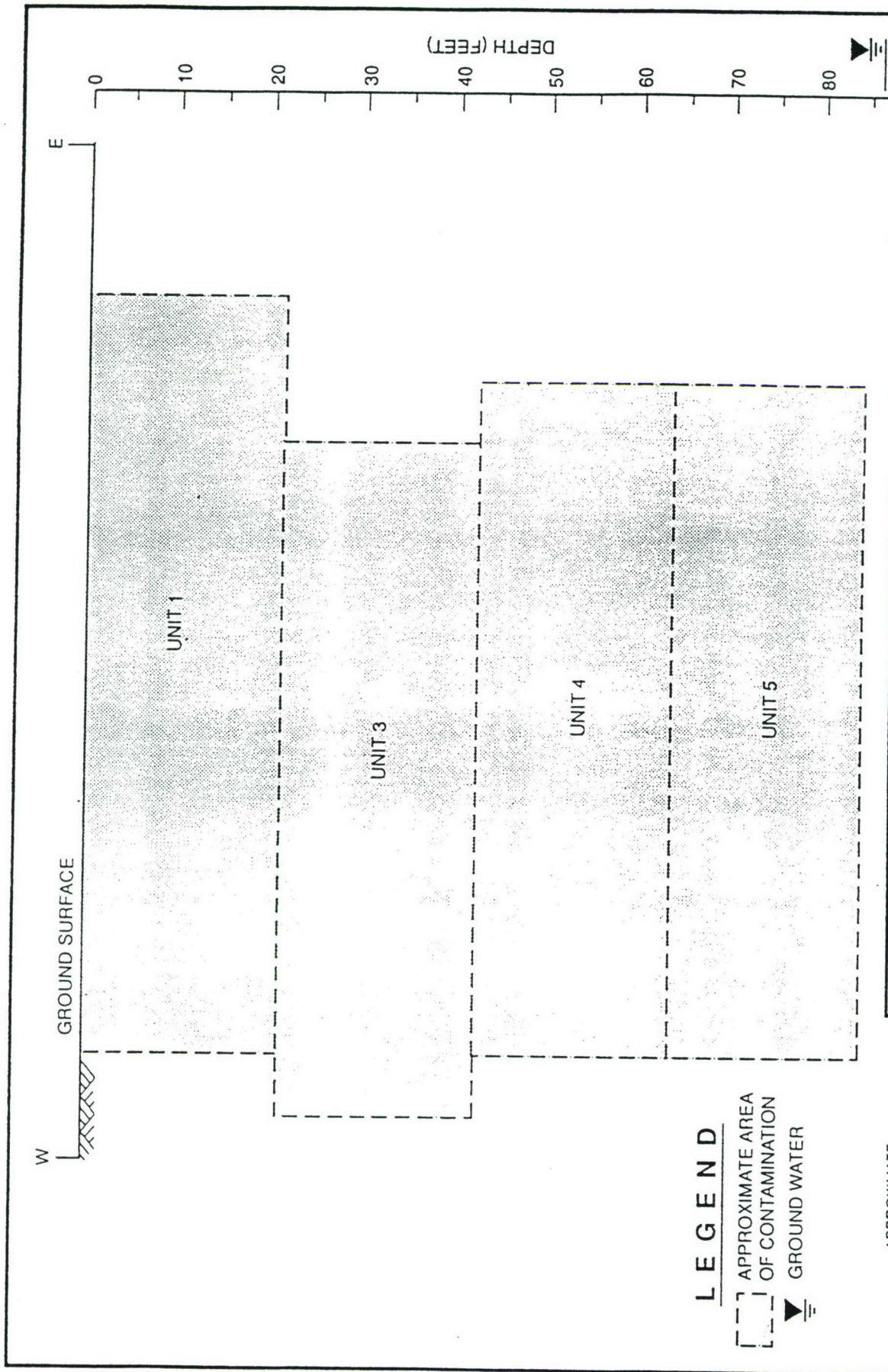
2-17

NORTH-SOUTH CONTAINMENT
DISTRIBUTION CROSS SECTION
BURN PITS OPERABLE UNIT
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

KLEINFELDER

DATE PRODUCED: 1/7/92 DATE REVISED:

PROJECT NO. 24-150006-C17



PLATE

WEST-EAST CONTAINMENT
DISTRIBUTION CROSS SECTION
BURN PITS OPERABLE UNIT
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

KLEINFELDER

DATE PRODUCED: 1/15/92 DATE REVISED:

PROJECT NO 24-150006-C17

2-18



Plates: Building 300 Burn Pits

MINDANAO STREET

CAROLINE DRIVE

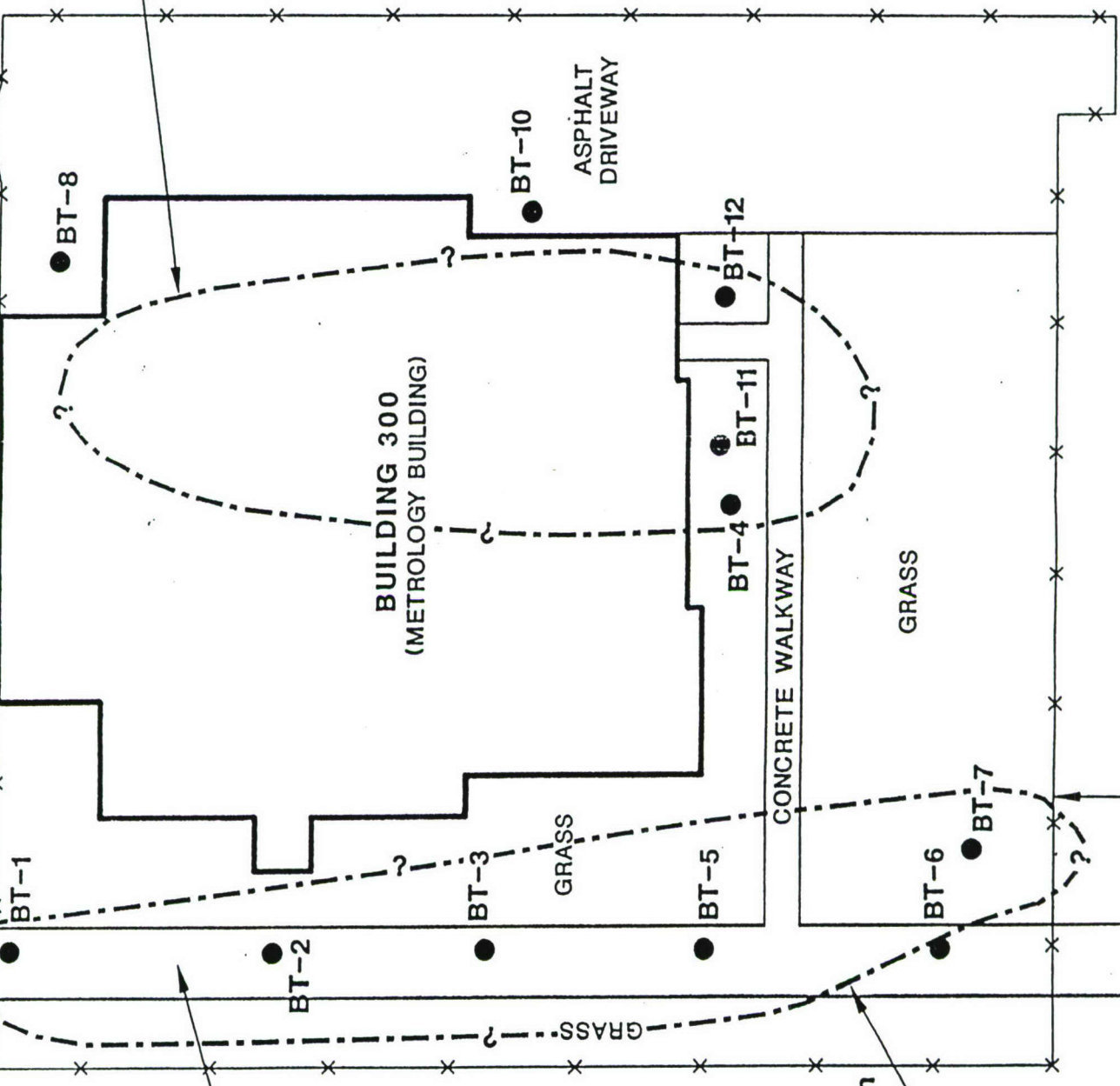
RAILROAD TRACKS

ASPHALT DRIVEWAY

MW-56

MW-57

Estimated Location of Eastern Old Burn Pit



LEGEND

BT-2 ● BORING LOCATION

—x— FENCE

MW-56 ○ MONITORING WELL LOCATION

NOTE: Old Burn Pit Locations are Estimated Based on Soil Boring Information and Aerial Photograph Reviews.

APPROXIMATE SCALE: 1" = 30'



Scale in Feet

KLEINFELDER

BORING LOCATION MAP
BUILDING 300 OLD BURN PITS
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

5-10

PROJECT NO. 24-150004-A12

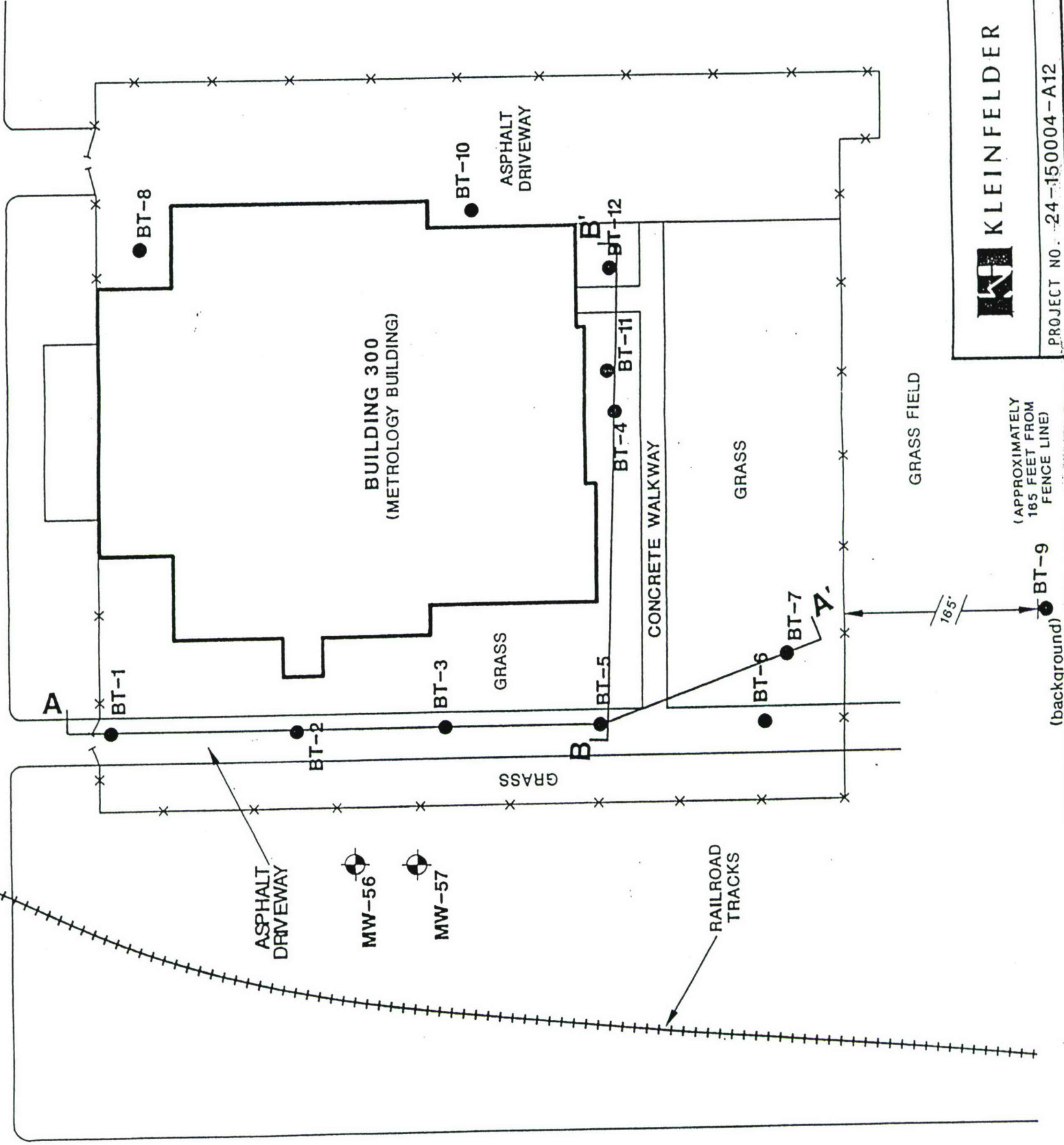
(APPROXIMATELY
165 FEET FROM
FENCE LINE)

BT-9
(background)



MINDANAO STREET

CAROLINE DRIVE



LEGEND

- BT-2 ● BORING LOCATION
- X— FENCE
- MW-56 ○ MONITORING WELL LOCATION
- A A' CROSS-SECTION LOCATION

APPROXIMATE SCALE 1" = 30'



PLATE

5-11

CROSS SECTION LOCATION MAP
BUILDING 300 OLD BURN PITS
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

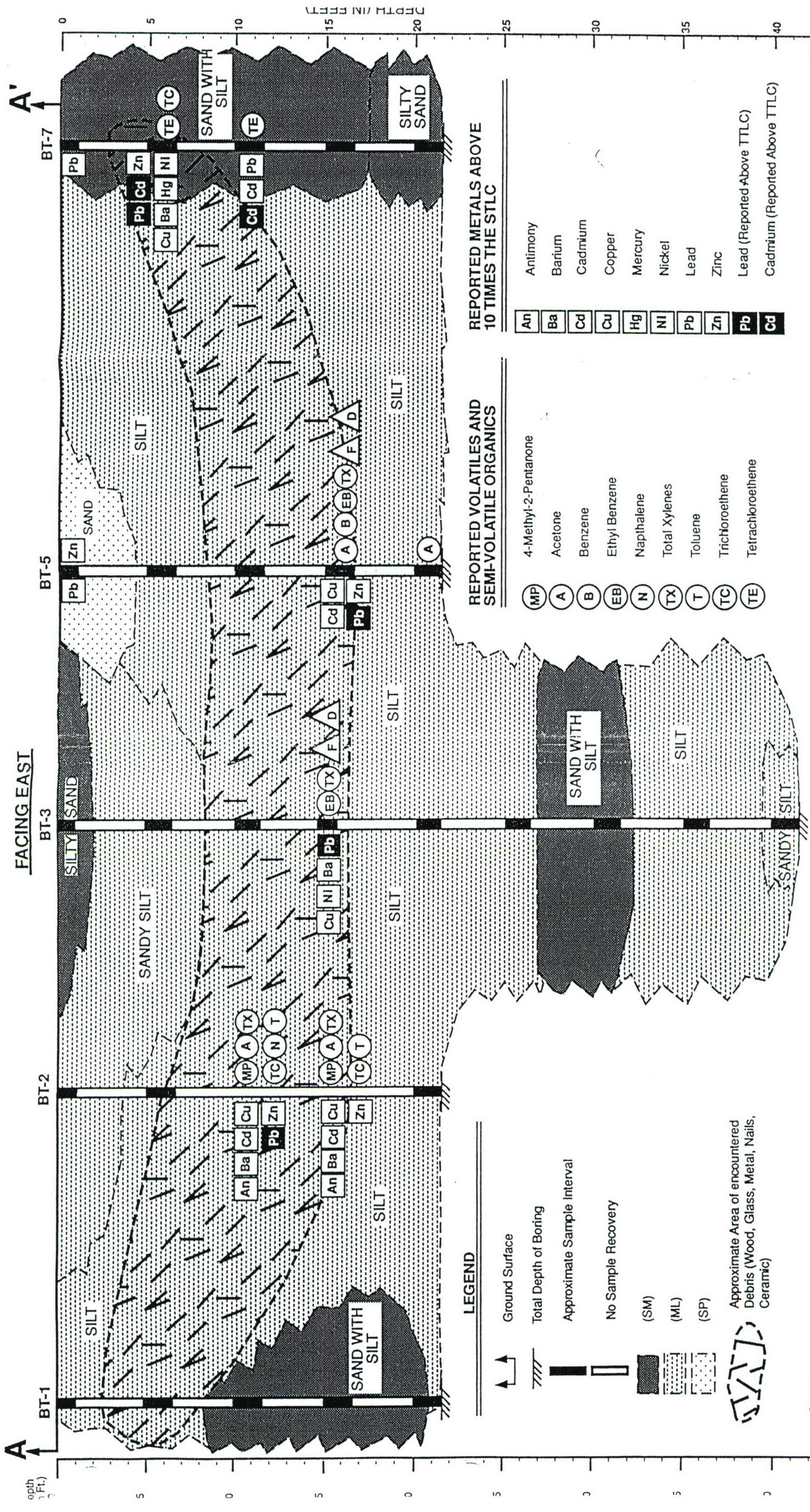
KLEINFELDER

PROJECT NO. 24-150004-A12

(APPROXIMATELY
185 FEET FROM
FENCE LINE)

(background)





REPORTED METALS ABOVE
10 TIMES THE STLC

An	Ba	Cd	Cu	Hg	Ni	Pb	Zn	Pb	Cd
Antimony	Barium	Cadmium	Copper	Mercury	Nickel	Lead	Zinc	Lead (Reported Above TTLC)	Cadmium (Reported Above TTLC)

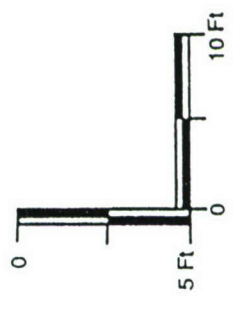
REPORTED VOLATILES AND
SEMI-VOLATILE ORGANICS

MP	A	B	EB	N	TX	T	TC	TE
4-Methyl-2-Pentanone	Acetone	Benzene	Ethyl Benzene	Napthalene	Total Xylenes	Toluene	Trichloroethene	Tetrachloroethene

REPORTED DIOXINS / FURANS

D	F
Dioxins	Furans

Vertical Scale: 1" = 5'
Horizontal Scale: 1" = 10'
(2 X Vertical Exaggeration)



**KLEINFELDER**

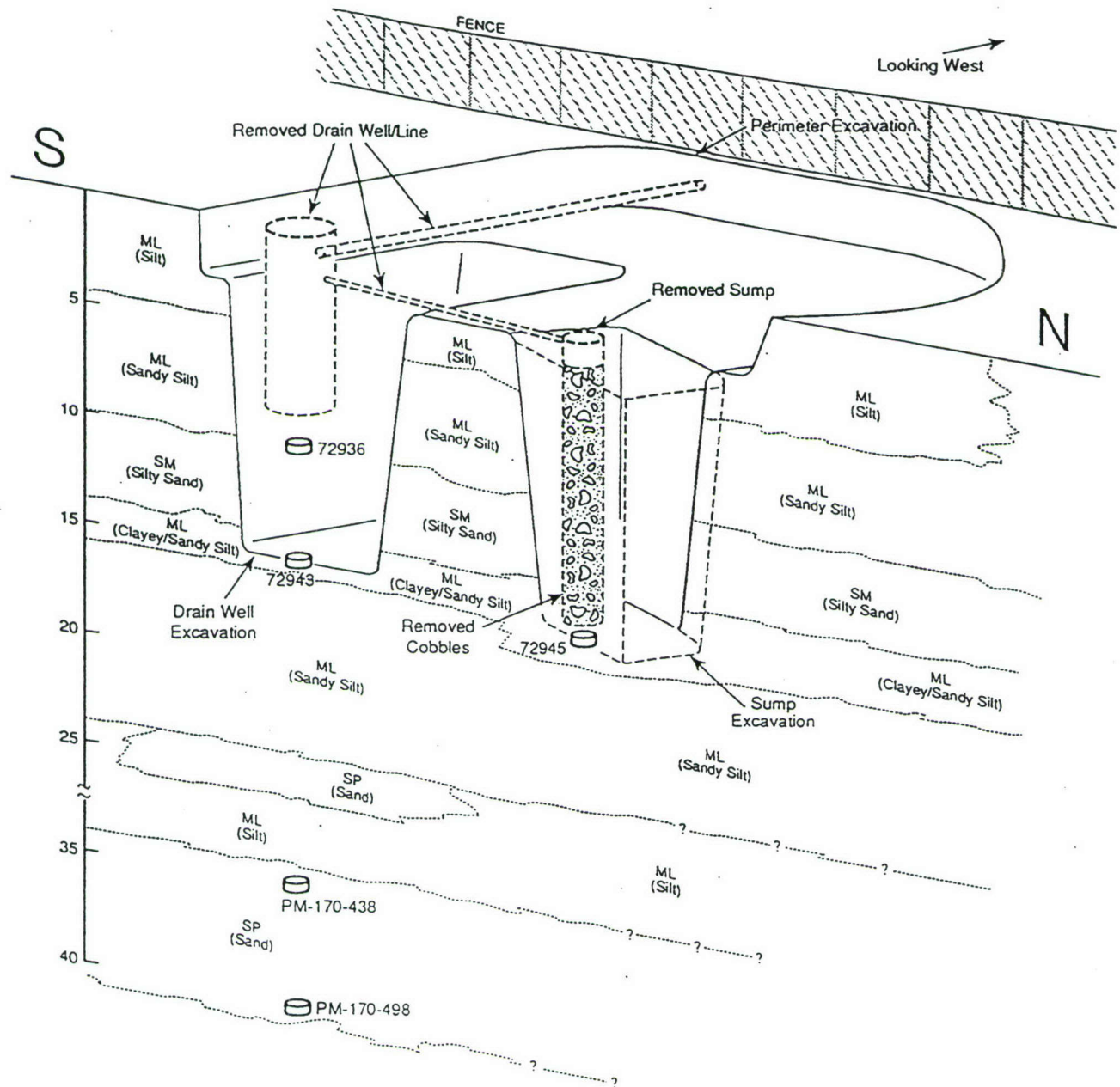
CROSS SECTION A-A'
BUILDING 300 OLD BURN PITS
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PROJECT NO. 24-150004-A12

PLATE
5-12



Plate: Pesticide Mix Area



LEGEND

⊗ Soil Sampling Location



KLEINFELDER

DATE PRODUCED: 5/18/93 DATE REVISED: 5/19/93

PROJECT NO. 24-150029-A03

S-N CROSS SECTION VIEW
PESTICIDE MIX AREA EXCAVATION
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

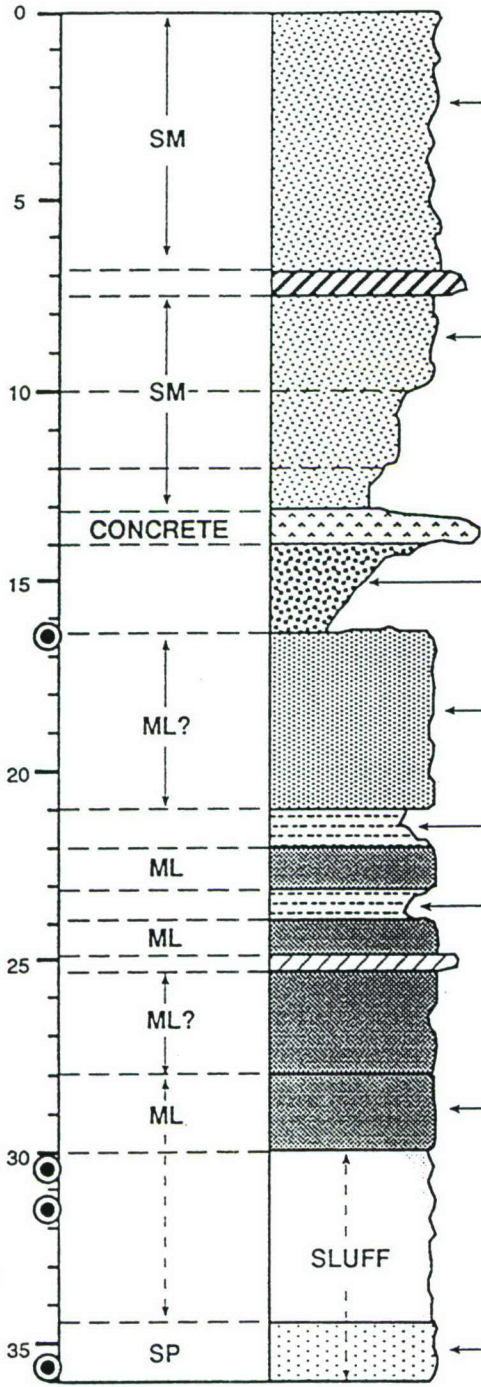
PLATE



Plate: Battery Disposal Well

Ground Surface 0

DEPTH IN FEET



Silty SAND - Light Brown, Moist, Soft, Fine with Small Pebbles. No Apparent Debris Noted

Silty SAND - As Above, Possible Void Space/Debris @ 10 feet. (Concrete, Rubble/Fill Material)

No Apparent Metal Debris

CONCRETE Layer

"Void" with Debris, Metal, Wire, No Apparent "Dry Cell" Batteries. Iron Staining

Light Gray (SILT?) - Material, No Recovery During Drilling, Soil Not Logged (16.5 to =28 feet)

Possible Void, Other Material @ 23 feet

Possible Void, Debris, Dark Brown, "Loose" with Pebbles @ 23 feet, Protruding "Paper-Like" Object @ 25 feet.

SILT - Gray-Brown, Moist, Very Dense, Moderately Cemented, Trace of Fine Sand

NOTE: Video Indicates Bottom of Boring @ 30 feet. Total Depth of Boring Drilled to 36 feet.

SAND - Yellow-Brown, Moist, Very Stiff, Fine, No Cementation

SUMMARY OF SAMPLES

BDB-030-198 (16.5 ft)	BDB-030-372 (31 ft.)
BDB-030-366 (30.5 ft)	BDB-030-432 (36 ft.)

LEGEND

● Indicates Sample Location/Depth



CROSS SECTION PROFILE BDB-3
BATTERY DISPOSAL WELL
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

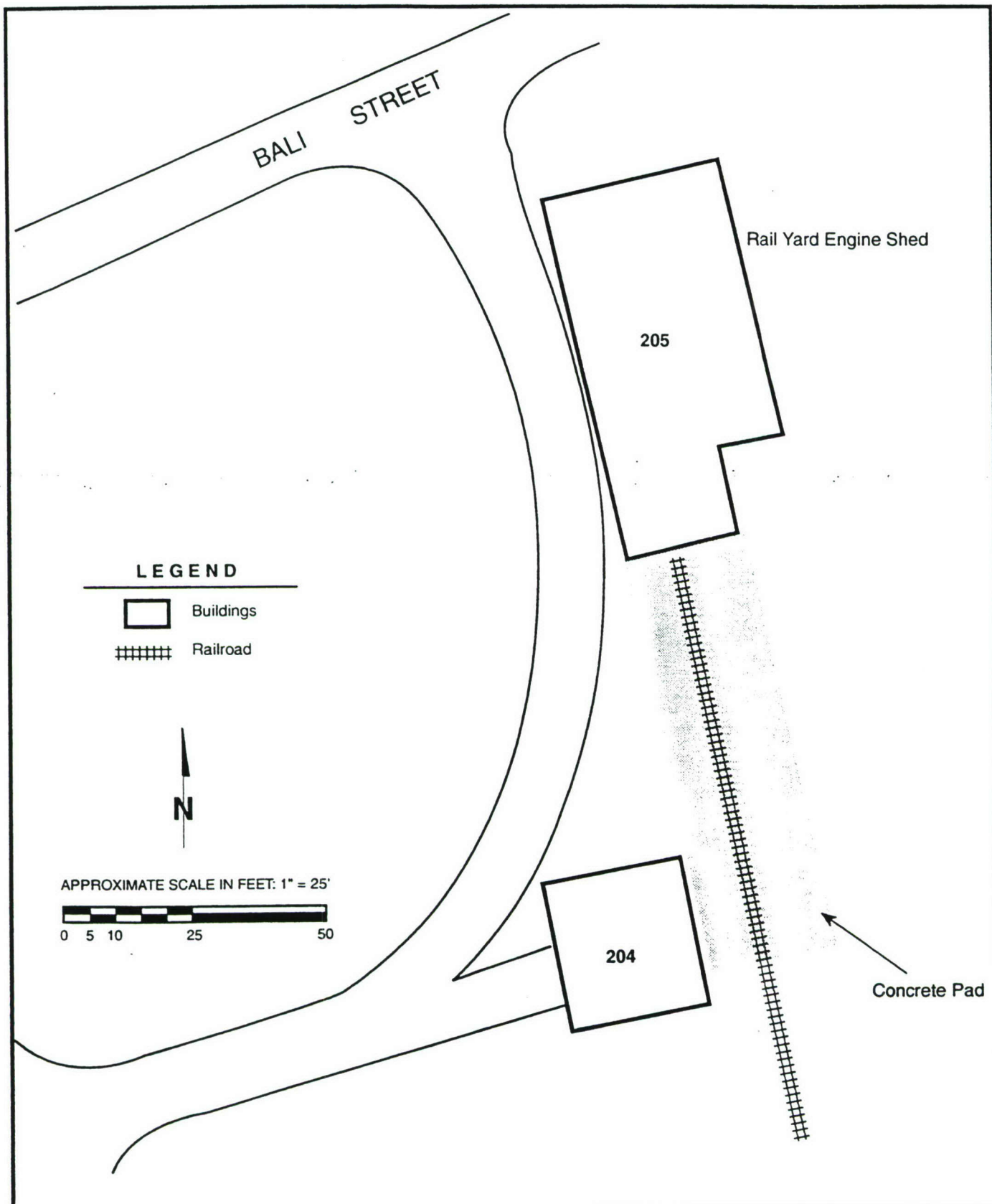
8-3

© Kleinfelder, Inc. 1992

DATE PRODUCED: 8/7/92 DATE REVISED:
PROJECT NO. 24-150029-A25



Plates: Bioventing at Building 205



KH KLEINFELDER

SITE LOCATION MAP

RAIL YARD ENGINE SHED
SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA

PLATE

1-2

Drawn By:
Project No. 24-150047-A03

Date: 7/21/94
Revised: 12/2/94



Project No. 24-150047-A03

Drawn By: TH

Date: 12/2/94

Revised:

KLEINFELDER

3-3

EXTENT OF CONTAMINATION
AT 3 FEET BGS
SACRAMENTO ARMY DEPOT

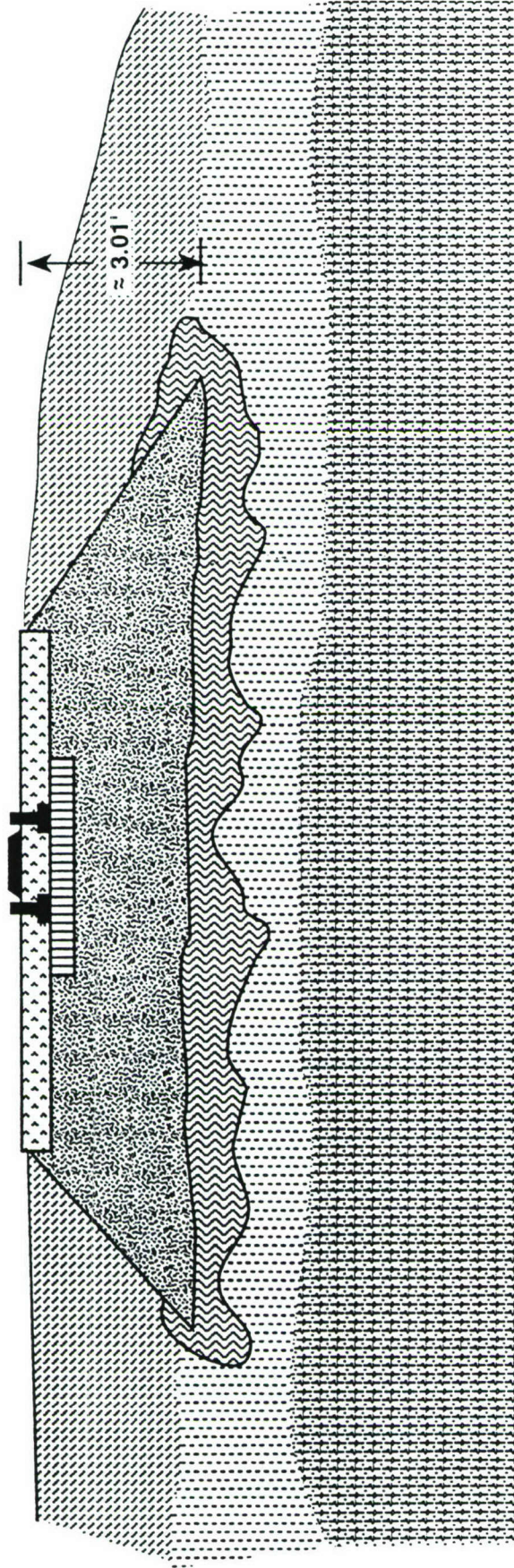
PLATE

APPROXIMATE SCALE IN FEET. 1" = 6'

Legend

⊕ BW-1	Bioventing well
+ PP-1	Pressure probe
⊕ BG-1	Background well
◇ RY-6	Boring
	Gravel
	Soil
	Concrete
	Radius of influence
	mg/kg Diesel





NOT TO SCALE

- | | |
|--|---|
| LEGEND | <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Clayey Silt |
| <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Sandy SILT | <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Soil Fill |
| <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Diesel Contamination | |
| <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Railroad Tie | <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Concrete Slab |
| <div style="display: inline-block; width: 20px; height: 10px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> Gravel Fill | |

**MOST LIKELY VERTICAL
PROFILE OF CONTAMINATION
BIOVENTING PILOT TEST**

SACRAMENTO ARMY DEPOT



Drawn By: D. Anderson
Project No. 24-150047-A03

Date: 10/25/94
Revised:



Appendix F

Environmental Justice Issues

F.1 Introduction

F.2 Outreach

F.3 Cultural Resources

F.4 Cleanup

F.5 Natural Resources

F.6 Revitalization

F.7 Deed and Lease Restrictions



F.1

Introduction

Environmental justice means that no segment of the population should bear a disproportionately high share of adverse human health or environmental effects of a proposed action. To achieve this end, Executive Order 12898, issued in February 11, 1994, requires DoD and other agencies to identify and address "... disproportionately high and adverse human health and environmental effects on minority and low-income populations." The following sections describe how environmental justice issues have been addressed in the disposal and reuse of the Depot. Topics include outreach, cultural resources, cleanup, natural resources, revitalization, and deed and lease restrictions.

Maps of low income and minority areas in the Depot vicinity have been prepared (Figures F-1 to F-5). They will support any future evaluation of potential environmental justice issues.

F.2

Outreach

Outreach was an essential part of the reuse planning and cleanup. Outreach was part of the Disposal and Reuse EIS process carried out under NEPA. It was also part of the City of Sacramento reuse planning process carried out under CEQA. The Restoration Advisory Board activity and the IRP process also addressed outreach to the local minority population.

F.2.1

Environmental Justice and NEPA

The NEPA process was concluded with the signing of the Record of Decision on January 13, 1995. No further action on the EIS is planned.

Potential human health and environmental effects on everyone in the immediate and regional areas around the Depot were addressed in the public involvement process for the disposal and reuse EIS. In this process, input from the public was openly and repeatedly solicited.

Public input on any related issue was solicited in scoping the EIS and in reviewing the Draft and Final EISs. The Notice of Intent to prepare the EIS was published in the Federal Register on December 30, 1992. Invitations to the scoping meeting were sent to all addresses within a 500 foot area around the Depot. The scoping process also included public notices in two local newspapers on January 17 and 27, 1993; press releases sent to 80 news media; and announcements sent to public agencies, public interest groups, and individuals thought or known to be interested in the disposal or reuse of the Depot. Also, over 200 notices were sent to local, state and federal legislative bodies announcing the scoping meeting and inviting comment. The scoping meeting was held at the Sacramento Convention Center during the evening of January 28, 1993, and comments were recorded. Written comments were received during a 40-day period ending February 8, 1993. The scoping report was made available at the four public information repositories; the George Sim Community Center, Sacramento Central Public Library, the California State University at Sacramento library, and the Depot Visitor Control Building.

Comments on the Draft EIS were solicited from all segments of the Sacramento population. The Draft EIS was released for public review and comment in January 1994. A public workshop on the Draft EIS was advertised in advance in the local newspaper, the Sacramento Bee. The Draft EIS was made available at the

repositories. The public workshop on the Draft EIS was conducted in the local area at the George Sim Community Center during the evening of February 15, 1994. The workshop was recorded. The comment period extended until March 21, 1995, and comments on the Draft EIS were addressed.

Comments on the Final EIS were solicited with announcements of its availability at the public information repositories. Announcements were published in the Sacramento Bee on November 9 and 16, 1994. The comment period extended to December 12, 1994. There were no comments that the Final EIS was inadequate.

F.2.2

Community Reuse Planning

Minority and low income populations in the area had several opportunities to be involved with the activity of the City's Sacramento Army Depot Reuse Commission. The Reuse Commission included a minority representative from the local community, and several public meetings were held to receive input from the community in developing the Reuse Plan for the City of Sacramento. The Reuse Commission completed its mission in 1994.

F.2.3

Disposal Plan

The intent of environmental justice was met in the disposal of the Depot property. Depot property for which DoD and other federal entities had no requirement was made available to homeless providers under the provisions of the Stewart B. McKinney Homeless Assistance Act. ACOE conducted an outreach workshop to notify homeless providers in California that real estate was available at SADA and how to submit an application.

McKinney Act screening resulted in four letters of interest. These were from California Emergency Foodlink, Operation Santa Claus, Vietnam Veterans, and the Sacramento Housing Alliance. The Department of Health and Human Services approved applications from Foodlink and Vietnam Veterans. Through subsequent funding arrangements with the City of Sacramento to locate its facility elsewhere in the City, Vietnam Veterans withdrew its McKinney application.

State and local screening resulted in opportunities for minorities. Property for which no homeless assistance requirement was identified was screened for interest by state and local government entities (public agencies) for public benefit discount or negotiated sale. These agencies may obtain property at less than fair market value when sponsored by a federal agency for uses that would benefit the public, such as public health, health and education, or wildlife conservation. State and local screening resulted in eight entities expressing interest in reuse of portions of the Depot. Those interested in a public benefit discount conveyance included the City of Sacramento, City of Sacramento Fire Department, Sacramento City Unified School District, Los Rios Community College District, California State University at Sacramento, California Department of Transportation, and California Department of Corrections.

Several acres have been transferred to the City under a public benefit discount conveyance. The City has leased several acres to Packard Bell with a stipulation that Packard Bell hire minority subcontractors for at least 10 percent of its construction activity. Further, Packard Bell has hired hundreds of people who were on social programs, such as Aid to Families with Dependent Children, in order to secure tax credits.

F.3

Cultural Resources

As described in the EIS, outreach efforts for cultural resources included Native American consultation, an archaeological survey on the Depot, historical archival research, and an architectural survey. The native American consultation program included discussions with representatives of 10 different Native American organizations, but did not identify any traditional cultural properties on the Depot. Furthermore, an inventory of the Depot did not record any cultural resources within its boundaries. The State Historic Preservation Officer was also consulted, and concluded that no National Register-eligible buildings or archaeological sites exist at the Depot.

F.4

Cleanup

The human health risk assessment included the areas off the Depot. Exposures linked to air, soil and groundwater sources of contamination on the Depot were examined. The only potential human health risk was associated with contaminated groundwater in the southwest corner of the Depot. However, since this groundwater is not a drinking water source and is being remediated, it was not considered a health risk for local low-income, minority or other people.

The Depot RAB provides direct outreach to the surrounding area on environmental cleanup efforts. The RAB co-chair is a minority resident of a neighboring housing area. The co-chair assisted Army personnel in selecting RAB members who represent all nearby residential areas and the ethnic mix of those communities. RAB meetings are held either at the Depot or in a nearby community center and are open to the public, with agendas mailed to an extensive mailing list from surrounding areas. Newsletters are mailed to all RAB members and to the extended mailing list. Copies are provided to homeowner newsletters in the area that communicate directly to their audiences in several languages. RAB members have been very active in reviewing environmental cleanup actions, asking questions, and offering suggestions on how to better communicate the process and results to the local community.

The remaining cleanup activity is on-site or over the plume along the southwest edge of the Depot. There are no residential areas over the plume. This area includes only industrial and commercial uses and vacant land, and the Army continues to communicate with the owners or operators of these areas.

The Army will continue to communicate with the community. The maps of low income and minority areas will be consulted should new issues or activity arise that could involve an off-site area.

F.5

Natural Resources

The potential for adverse environmental effects to be disproportionately high on low-income and minority populations were addressed through outreach for the NEPA, CEQA processes. Natural resources addressed included soils/geology, water, air, and biological resources. Input from low-income and minority populations was solicited in the outreach activity and local participation as described above. The City of Sacramento and RAB continue to be forums for local low-income and minority people to have concerns about groundwater heard and addressed.

F.6

Revitalization

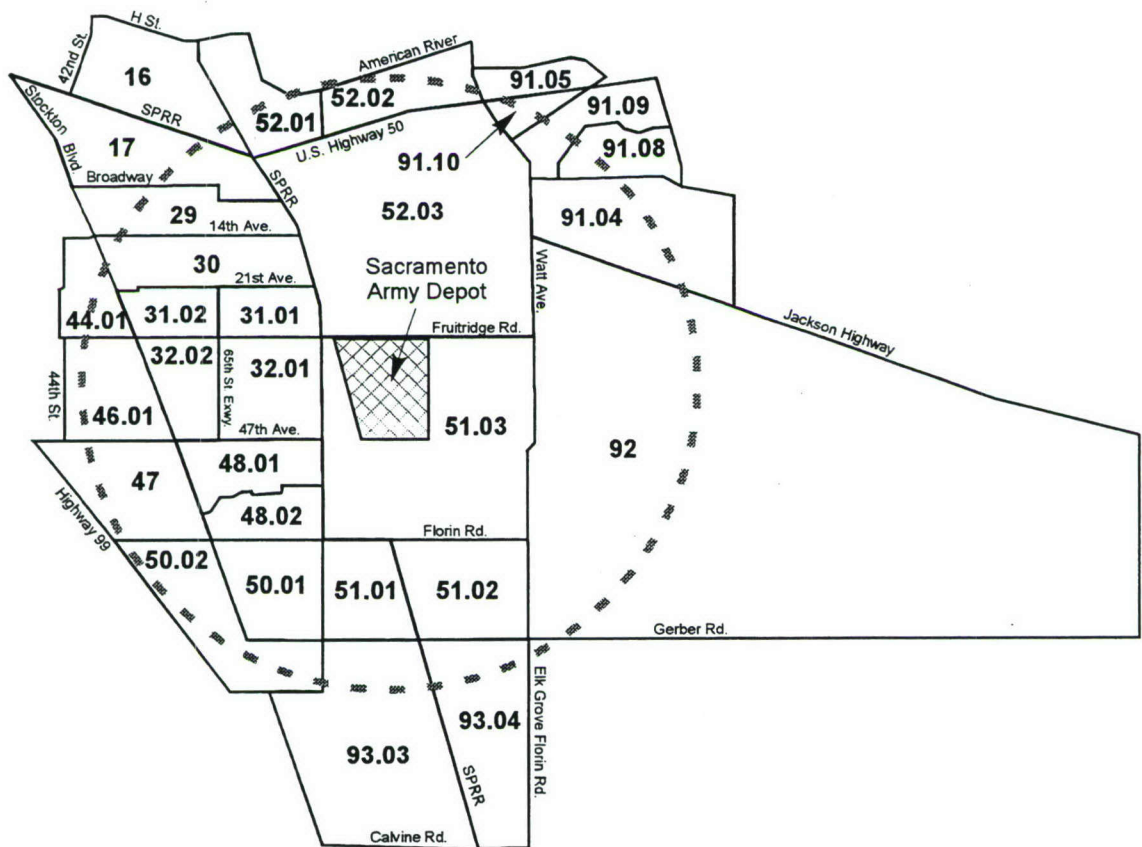
Environmental justice is being supported through the disposal and reuse of the Depot. The Reuse planning process and the employment practices of the new users of the Depot are focused on promoting opportunities for input and for employment for low-income and minority populations. The City Reuse Commission, which developed the Reuse Plan approved by the City, included local residents in the vicinity of the Depot. Subsequent to the Reuse Plan, the City leased most of the Depot to Packard Bell Company for computer manufacturing. The City stipulated that Packard Bell hire minority subcontractors for at least 10 percent of its construction activity. Further, Packard Bell has hired hundreds of people who were on social programs, such as Aid to Families with Dependent Children, in order to secure tax credits.

F.7

Deed and Lease Restrictions

The Depot's remediation policy of cleaning up past soil and groundwater contamination to residential standards supports the environmental justice issue and minimizes the number and types of restrictions that need to be placed in the transfer deeds and interim leases. Buildings on the installation have generally been cleaned to meet an industrial standard for reuse and are being used as such by the reuse entities.

The Finding of Suitability to Transfer (FOST) recommended numerous environmental conveyance restrictions. All of these restrictions were included in the quitclaim deed to the City of Sacramento. The deed reserved existing utility easements and road right-of-ways for the public benefit discount and McKinney parcels. The Federal Facilities Agreement (FFA) and the Environmental Baseline Surveys (EBSs) were made a part of the deed. The City was notified of the environmental condition and was provided with a Notice of Past Presence of Hazardous Materials Stored, Released or Disposed of at SADA. The deed also contained notices of the presence of asbestos, lead-based paint, radiation, and underground storage tanks.



LEGEND

- 51.02** CENSUS TRACT NUMBER
- CENSUS TRACT BOUNDARY
- THREE MILE RADIUS

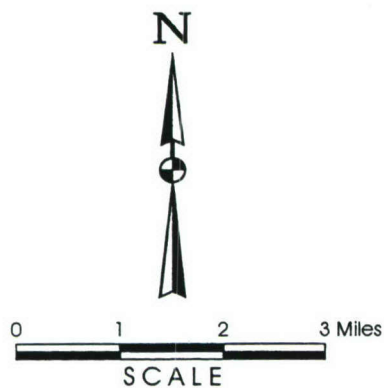
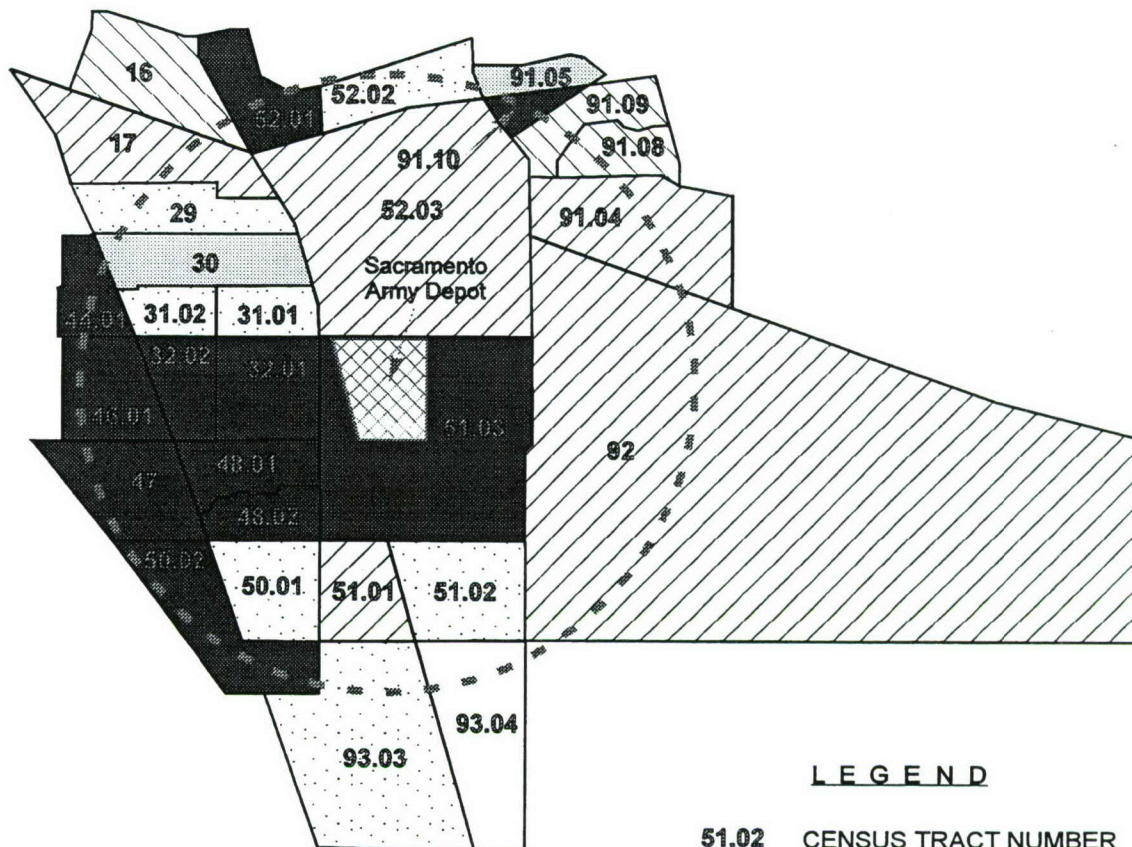


FIGURE F-1

CENSUS TRACTS WITHIN
THREE MILE RADIUS

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

- 51.02** CENSUS TRACT NUMBER
- CENSUS TRACT BOUNDARY
- - - THREE MILE RADIUS

PERCENT OF POPULATION BELOW POVERTY LEVEL

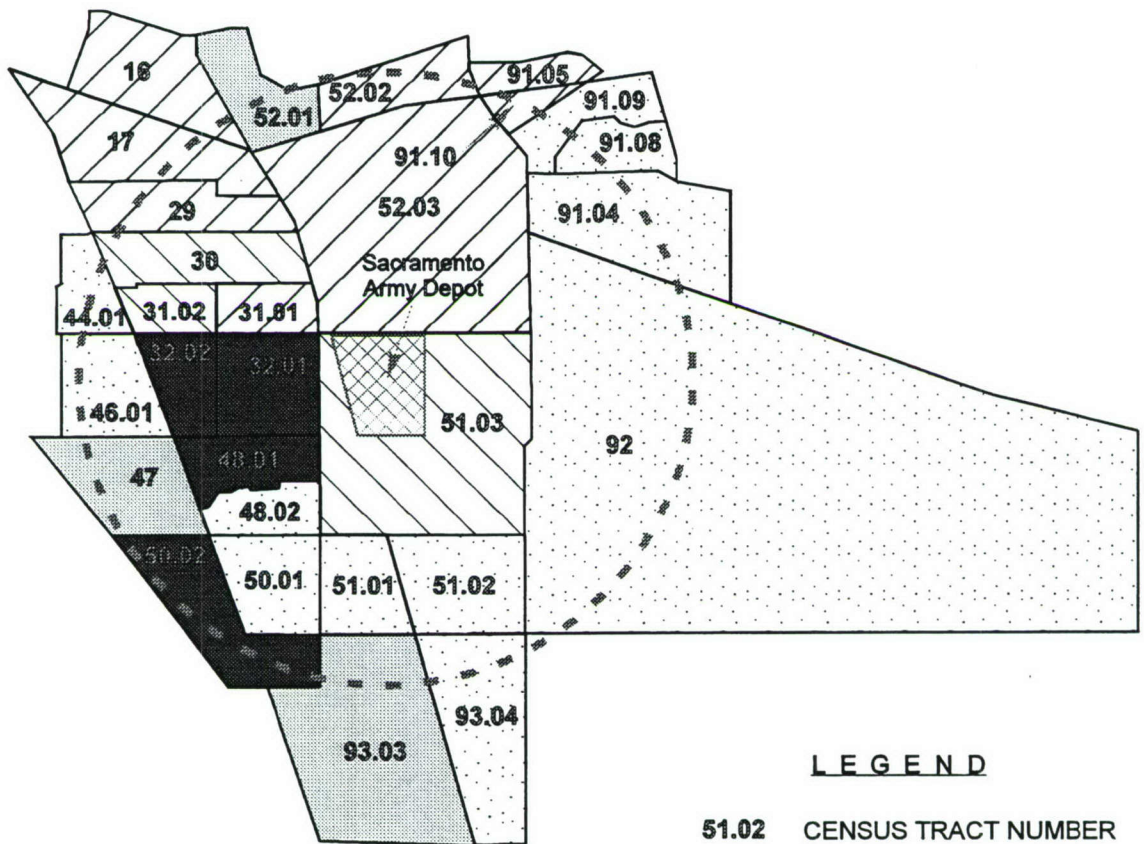
- LESS THAN 5%
- 5.0 - 6.9
- 7.0 - 9.9
- 10.0 - 13.9
- 14.0 - 19.9
- 20% OR MORE



FIGURE F-2

PERCENT OF POPULATION
BELOW POVERTY LEVEL

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

- 51.02** CENSUS TRACT NUMBER
- CENSUS TRACT BOUNDARY
- - - THREE MILE RADIUS

ASIAN POPULATION DISTRIBUTION

	LESS THAN 0.50%
	0.51 - 4.99
	5.00 - 9.99
	10.00 - 14.99
	15.00 - 24.99
	25.00% OR MORE

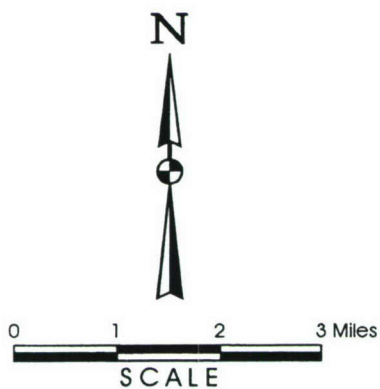
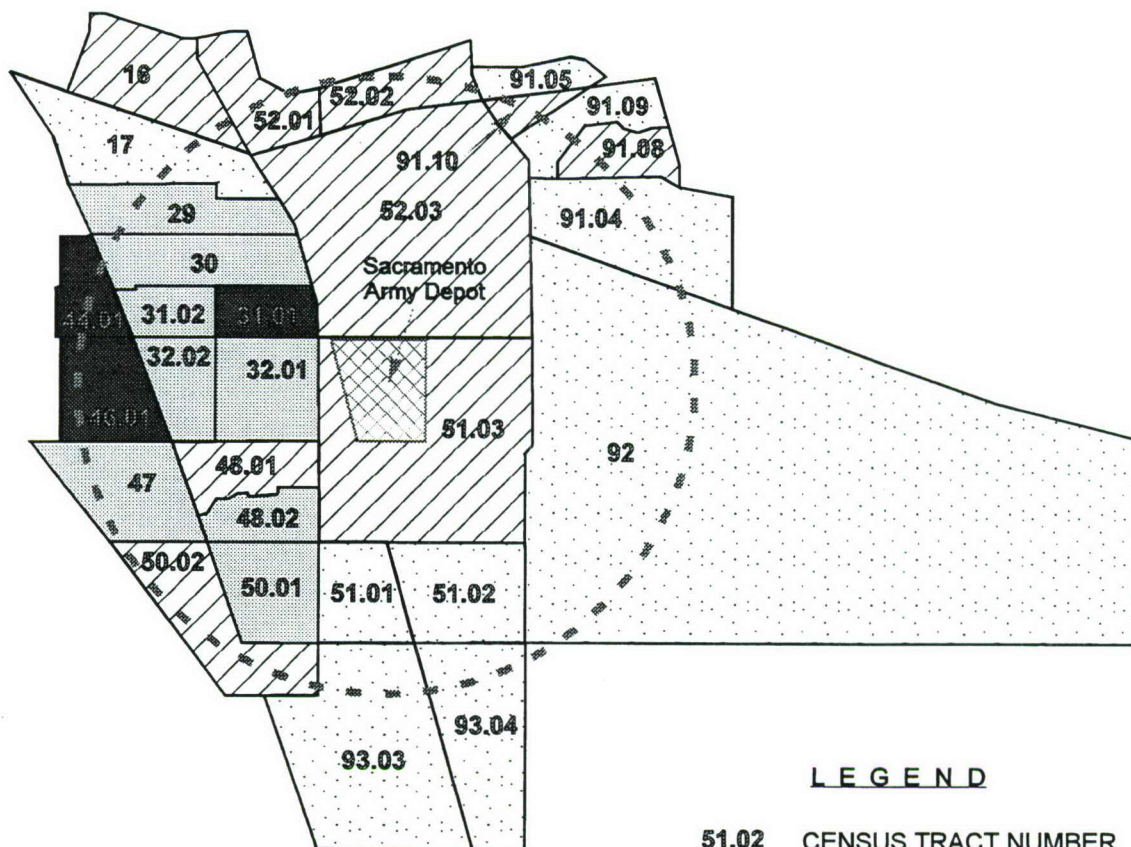


FIGURE F-3

PERCENT OF POPULATION
ASIAN

SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA



LEGEND

51.02 CENSUS TRACT NUMBER
 — CENSUS TRACT BOUNDARY
 - - - - - THREE MILE RADIUS

HISPANIC ORIGIN POPULATION DISTRIBUTION

LESS THAN 0.50%
 0.51 - 4.99
 5.00 - 9.99
 10.00 - 14.99
 15.00 - 24.99
 25.00% OR MORE

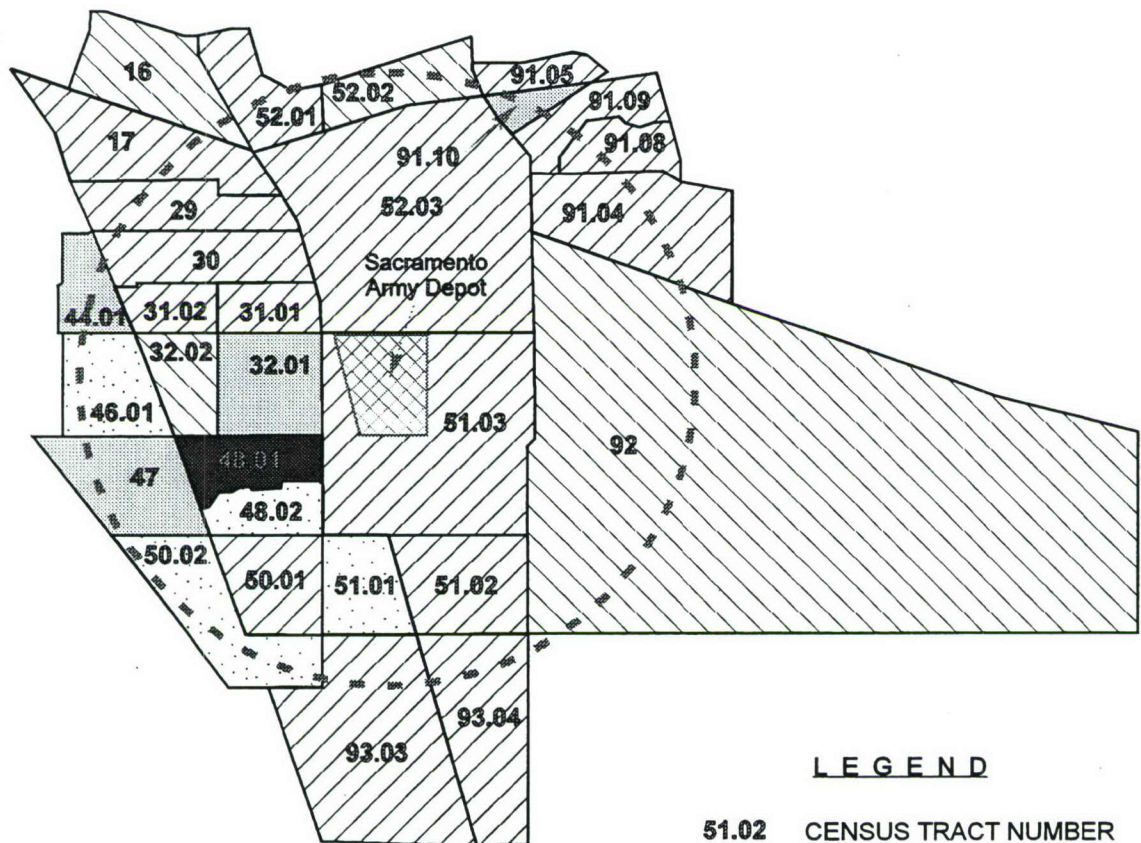


0 1 2 3 Miles
 SCALE

FIGURE F-4

PERCENT OF POPULATION
 HISPANIC

SACRAMENTO ARMY DEPOT
 SACRAMENTO, CALIFORNIA



LEGEND

- 51.02** CENSUS TRACT NUMBER
- CENSUS TRACT BOUNDARY
- - - THREE MILE RADIUS

BLACK POPULATION DISTRIBUTION

- LESS THAN 0.50%
- 0.51 - 4.99
- 5.00 - 9.99
- 10.00 - 14.99
- 15.00 - 24.99
- 25.00% OR MORE



FIGURE F-5

**PERCENT OF POPULATION
BLACK**

**SACRAMENTO ARMY DEPOT
SACRAMENTO, CALIFORNIA**

SOURCE: SACRAMENTO AREA COUNCIL OF GOVERNMENTS, U.S. 1990 CENSUS.

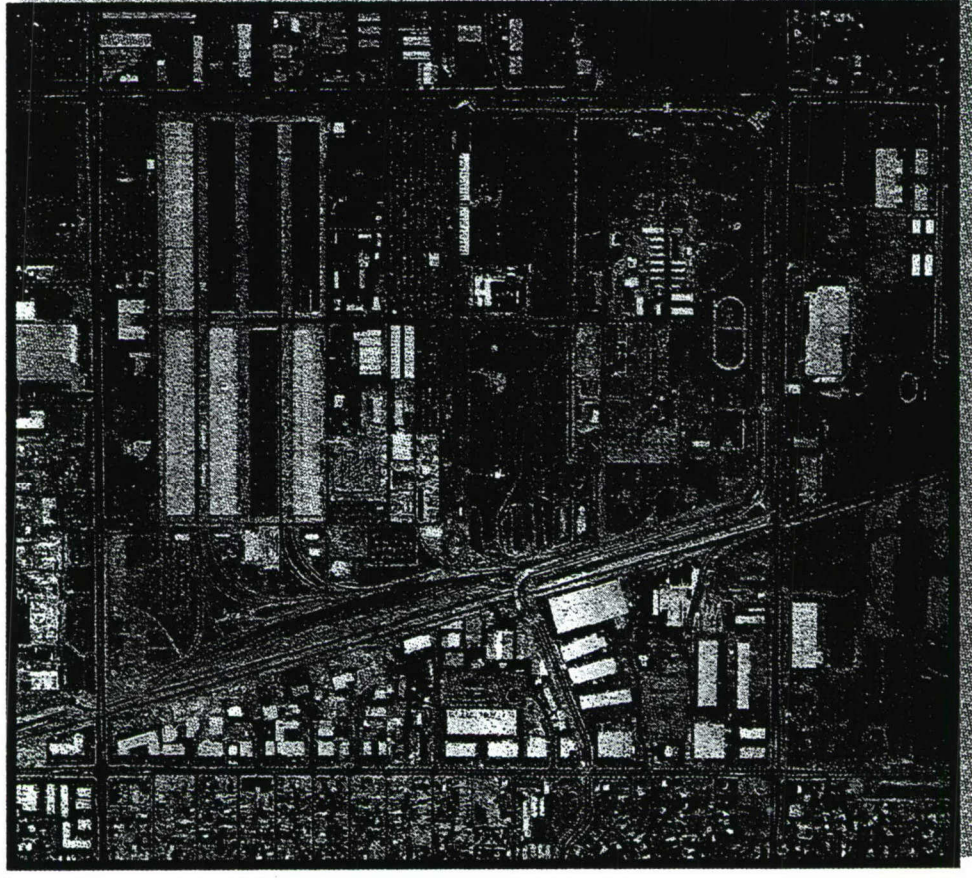
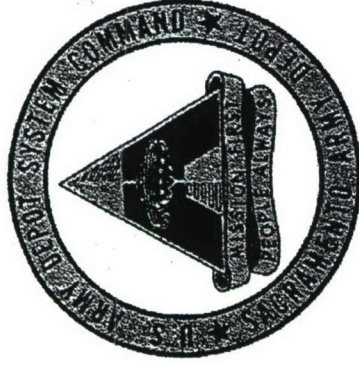


Appendix G
1994 Army Environmental Award



Sacramento Army Depot Activity (SADA) Environmental Cleanup Award

1993 - 1994



Sacramento, California

Introduction

The Sacramento Army Depot, now an Activity (SADA), was established in 1945 to receive, store, issue, repair, rebuild, and maintain electronic equipment and other commodities. The facility encompasses an area of 485 acres and is located approximately seven miles southeast of downtown Sacramento, California (within the city limits). SADA is surrounded on all sides by land zoned as commercial/light industrial, but, outside a mile radius, the areas are primarily low to medium density residential. The surrounding community generally consists of low income areas with some isolated moderate income areas, featuring ethnic minorities, moderate unemployment rates, and political activity on specific issues.

Background

SADA is a 1991 Base Realignment and Closure (BRAC) site, and all missions at SADA have been reassigned to other military installations. SADA will be officially closed, and most of the Army property will be transferred to the City of Sacramento for reuse, on March 3, 1995. The transfer is over two years ahead of the required BRAC closure date of July 1997. In its prime, SADA had approximately 6,000 military, civilian, and contract employees. SADA has downsized to the current workforce of approximately 20 civilian and three military personnel, and this workforce will remain until April 1995. At that time, two civilian environmental employees will remain to complete the environmental cleanups and finish the process to delete the facility from the National Priorities List (NPL).

The Installation Restoration Program (IRP) effort at SADA was initiated in 1979 and consists of 55 sites with a wide variety of contamination, including multiple contamination on single sites. A number of investigations were conducted which led to the placement of SADA on the NPL in August 1987. When the Federal Facility Agreement (FFA) was signed in December 1988 [first western Department of Defense (DoD) FFA], SADA environmental staff began an aggressive, proactive approach to all environmental compliance and cleanup issues. SADA's staff has consistently worked closely with the U.S. Environmental Protection Agency (EPA), Region IX; the California EPA, Department of Toxic Substances Control (DTSC); the Central Valley Regional

Water Quality Control Board (CVRWQCB); and the U.S. Army Corps of Engineers (COE), Sacramento Division; in all phases of the IRP effort (cradle to grave). This SADA team approach and ability to resolve issues quickly and effectively through open discussions and problem solving meetings, coupled with the goal-oriented desire to clean up contaminated sites quickly without risking human health or the environment, have led to SADA's model Fast Track Cleanup two years ahead of the agreed upon FFA timelines and the BRAC closure requirements. All of SADA's cleanup and remediation initiatives are either completed, ongoing, or under contract. Also, all remediations are cleaned to residential standards, leaving the property	unrestricted for any envisioned reuse by the community. Four operable unit Records of Decision (RODs) have been signed: South Post Groundwater Treatment, Tank 2 Area, Oxidation Lagoons, and South Post Burn Pits. Community involvement has played an important role in SADA's remediation and reuse success. SADA has always encouraged public involvement and participation throughout the cleanup process. This has been done through public comment periods, public meetings, public tours of the depot and remediation areas, newspaper advertisements, TV and radio newscasts, notifications, information mailers, and using SADA employees to pass on information to the public. In November 1993 and with additions in June 1994, SADA established a	Restoration Advisory Board (RAB) to increase public participation by involving the community in the decision-making process. The RAB has been very supportive and involved in the process of developing the Basewide ROD, as well as in other environmental actions required for base closure. Public participation by RAB members, as well as all community members, is encouraged, welcomed, and valued. With the continued teamwork involving the Army, regulators, and community members, SADA anticipates being the first DoD installation to be deleted from the NPL by December 1996.
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Program Summary

The objective of the Environmental Cleanup Program is to work as a team to effectively and efficiently clean up SADA without sacrificing human health or the environment. The philosophy of all involved is to attack the source of the contamination without "studying it to death." An important point to remember is that, from the start, the SADA team has envisioned the Environmental Cleanup Program as a holistic process. All environmental issues are discussed, including Pollution Prevention, Recycling, Natural Resources, Cleanups, Operations, and Reuse to assure protection of human health and the environment. This has enabled a quick and environmentally clean transfer of SADA to the City of Sacramento. This transfer is extremely

Accomplishments

important to the community, complies with BRAC Fast Track Cleanup, and is consistent with the President's Five Part Program.

The primary goal at SADA is to continue to exercise this proactive team approach in the cleanup process so that SADA is able to be deleted from the NPL in 1996.

Despite the fact that SADA is a closing installation and has been downsizing in personnel and resources during the past three years, many significant accomplishments have been achieved.

The following is a description of the activities and achievements at SADA during the last three years.

South Post Groundwater Treatment

contaminated soil from the Building 300 Burn Pits, Oxidation Lagoons, and

Battery Disposal Well and stabilize it at the South Post Burn Pits.

Additionally, the Basewide ROD establishes a final cleanup level for groundwater, using drinking water standards as the only required cleanup

level. This is a first for this region of California. Additional off-site horizontal extraction wells will also be installed to augment existing wells and expedite the groundwater remediation.

Regarding this Basewide ROD, federal EPA said, "This action brings us one step closer to the ultimate objective of this base, and all other military bases that are in the process of closing: to expedite its cleanup and ensure that the property is environmentally safe so that it can be made available for reuse."

An interim ROD was signed on this area in September 1989. Solvents from the South Post Burn Pits had contaminated the groundwater both on and off SADA. Since the nearest public drinking wells were within half a mile down gradient of the groundwater contamination plume, an aggressive treatment system was developed, installed, and operational by November 1989 (one month after ROD signature). This system uses extraction wells to pump contaminated groundwater to an innovative Ultraviolet Light/Chemical Oxidation Treatment System. The treatment destroys the contamination and cleans the groundwater to drinking water standards or cleaner. This technology was selected over others

because no hazardous by-products result from the treatment process, unlike air stripping or carbon absorption. The clean water is then pumped into the sewer system to assist in the county's overall regional treatment system. While this treatment system was initially installed to fence the contaminated plume, SADA has realized further benefits through a major reduction in the overall groundwater contamination plume size, a 70% reduction in the groundwater plume concentration level, and the ability to pull the groundwater plume back towards the SADA property.

Tank 2 Area

Oxidation Lagoons

A ROD was signed on this area in December 1991. A waste solvent tank removed in 1986 had leaked and contaminated the soil to a depth of 35 feet. The area was remediated using soil ventilation to clean the soil in place without excavation. The remedy was completed in March 1993, cleanup goals have been met and approved by the agencies, and this area requires no further action.

A ROD was signed on this area in September 1992. Rinse waters from SADA plating operations were piped to the four lagoons where the water would evaporate leaving heavy metal contamination in the top two feet of the soil. The remedy selected was excavation of contaminated soil, followed by on-site soil washing to remove metals of concern, and placement of clean, washed soil back into the excavation. A large scale pilot test for soil washing was conducted at the area in 1993/94. The pilot test indicated that soil washing did not offer the most cost effective technology for protection of human health and the environment. The SADA team re-evaluated the remedy for the Oxidation Lagoons and amended the ROD to

change the remedy from soil washing to the second preselected alternative, soil stabilization, as described in the Basewide ROD.

South Post Burn Pits

A ROD was signed for this area in March 1993. Solvents, plating sludge, paint wastes, and construction debris were burned in two pits at the southwest corner of SADA, then covered with soil. Both the soil and groundwater are contaminated. A two phase remedy was selected: in situ soil ventilation to remove volatile organic compounds (VOCs), followed by excavation of the pit area with stabilization of the excavated soil to treat non-volatile compounds, and backfilling the pits with the stabilized soil. The soil ventilation phase was started in March 1994 and is ongoing, and a contract has been awarded for the stabilization phase, which will start in the spring of 1995.

Old Pesticide Mix Area

Pesticide rinse waters drained onto the soil from a former washout sink, which contaminated the soil to a depth of 25 feet. The contaminated soil was excavated during the investigation phase and backfilled with clean soil. The investigative derived waste from this area was disposed of in a Class 1 landfill in July 1993. The remaining area presents no threat and is listed as a no further action area in the Basewide ROD.

Battery Disposal Well

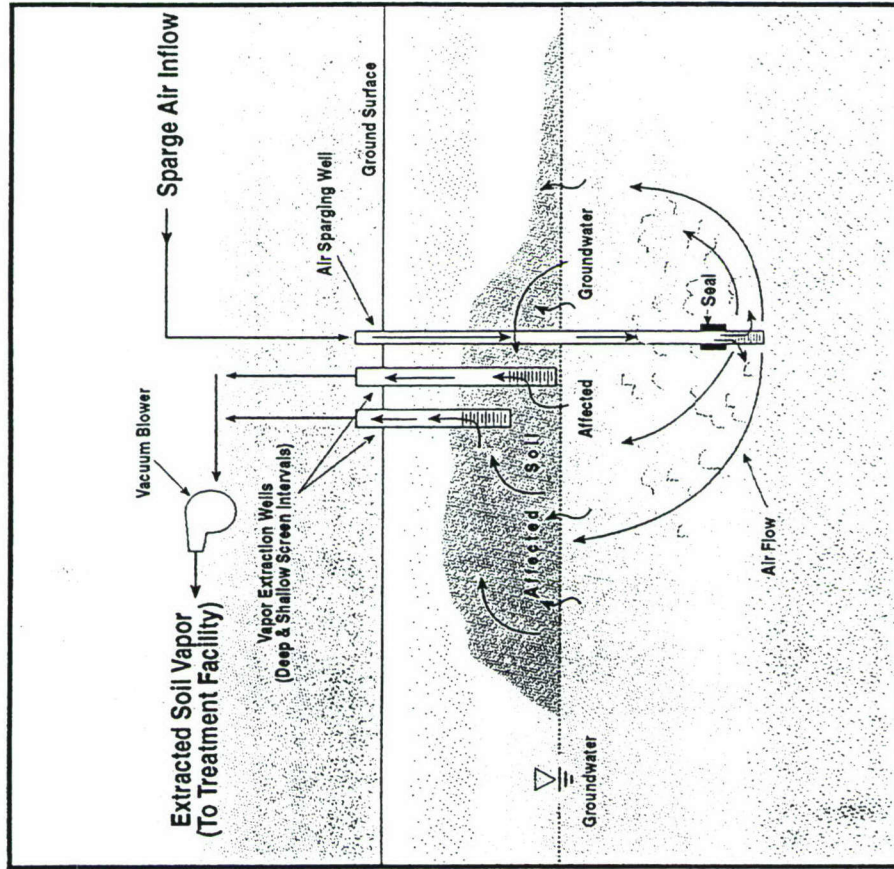
A preexisting farmer's well was used for disposal of dry cell batteries and other industrial debris, which contaminated the soil to a depth of 30 feet. The contaminated soil was excavated during the investigation phase and backfilled with clean soil. The investigative derived waste was placed in bins in July 1993 for future stabilization in the burn pits. The remaining area presents no threat and is listed as a no further action area in the Basewide ROD.

Parking Lot 3

Discovered in late 1993, soil and groundwater were contaminated from an old washout tank. The SADA team created and developed an innovative technology, air sparging, to clean up the soil, wet zone, and groundwater in a one step treatment system. A pilot test was established for the area using a combination of air sparging, soil venting, and absorption/resorption treatment to test the cleanup process. The pilot test was completed in October 1994 and was successful in eliminating major contamination in all three zones. The remaining soil and wet zone area presents no threat and is listed as a no further action area in the Basewide ROD. The remaining groundwater contamination is at low concentration levels (90% reduction) and is also addressed in the Basewide ROD.

Air Sparging-Soil Vapor Extraction Process Used At Parking Lot 3

Sacramento Army Depot



Air Sparging forces air into the ground. This air removes the contaminants from the soil. The air then flows up through the soil and is removed by the vapor extraction well.

Freon 113 Contamination

Decontamination Team

Discovered during remediation of the Tank 2 Area, the suspected source was vehicle washing on bare ground. Both the soil and groundwater were contaminated. The SADA team used the existing pilot test equipment at Parking Lot 3 to further test the treatment effects on Freon 113. The pilot test was completed in December 1994 and was successful in eliminating contamination in the soil, wet zone, and groundwater. The remaining area presents no threat and is listed as a no further action area in the Basewide ROD.

An in-house Decontamination Team was established and implemented to clean non-Superfund areas, such as the plating shop, graphic arts, and other buildings that stored hazardous materials. This Decontamination Team was implemented by SADA one month before the Army instituted their policy for using in-house members for cleanup of contaminated areas at installations. Team members were provided the technical training that made them fully effective at the task of decontaminating buildings throughout SADA to make the buildings readily available for reuse. Using this in-house Decontamination Team, rather than using off-site contractors, saved SADA over one million dollars in cleanup costs. This effort was so successful that several of the decontaminated buildings are part of the area currently used by the City of Sacramento.

Streamlining

In an effort to streamline the environmental cleanup process, SADA actively cooperated with the State and local authorities to expedite the assessment approval process. By openly working with these agencies, SADA was able to initiate cleanup measures faster.

SADA also found it faster to break the installation down into operable units. By doing this, each unit was attacked, one at a time. Groundwater cleanup was initiated in 1989. If SADA had waited until an assessment was completed on the entire facility, groundwater cleanup would not have begun until 1994.

Another reason sites were cleaned faster was because of the cooperative efforts among the U.S. Army Materiel Command (AMC), the U.S. Army Environmental Center (AEC), the Depot

"California has been a leader among states in proactively working with the Defense Department and U.S. EPA to expedite the cleanup and reuse of closing bases. The commitment of the community is responsible in large part for the Army Depot's front-runner status among the nation's closing bases."

~ Call/EPA Secretary James M. Strock ~

Systems Command (DESCOM), the Base Realignment and Closure Offices (BRAC), the U.S. Army Environmental Hygiene Agency (AEHA), and the COE. This combined effort helped to expedite assessment approval and put funding and contracts in place to begin the work. All remediations will be completed by September 1996, except for groundwater. In 1996, groundwater contamination will be at a low concentration level, but will still require extraction and treatment until	September 2001. The ongoing groundwater treatment will not preclude SADA from attempting to be deleted from the NPL by December 1996. The SADA team is extremely interested in pursuing the opportunity of being the first DoD facility to be deleted from the NPL. In response to this goal, EPA is reviewing their existing policies to assist the SADA team. Again, these streamlined efforts have enabled SADA to meet its Fast Track Cleanup goals.
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Restoration Advisory Board

SADA's RAB has been operating since July 1994 to interface with the community on cleanup and environmental issues. Prior to the RAB's creation, SADA was closely working with the community through its Technical Review Committee. The community was given information regarding the timelines, technologies, and progress of cleanup. A strong working relationship and high level of trust existed before the RAB was chartered. The RAB served to increase even further the outstanding relationship with the community. The co-chairman of the RAB is the president of a local neighborhood association, and

he has been instrumental in getting more support from other associations. As previously mentioned, the RAB is an integral part of this team effort to clean up SADA in the most efficient and effective manner.

Business Opportunities

The community not only benefits through RAB participation, but also by increased local business opportunities associated with the cleanup efforts. Since cleanup began, SADA has been using small and small disadvantaged businesses in the environmental cleanup. The prime contractor involved since 1986 was a small business which has since grown to a large firm. In conjunction with the COE, the prime contractor has many subcontracts with small and small disadvantaged businesses. Small businesses have been informed of opportunities through the Small Business Administration (SBA), the COE, and the prime contractor's past work with small firms. SADA cannot estimate how many jobs have

been created by the cleanup, but approximately 25 million dollars worth of contracts have been associated with the cleanup since 1986.

Reducing Risk To Human Health And The Environment

Throughout this entire cleanup process, eliminating risk to human health and the environment has been an important goal. Based on SADA's ability to quickly estimate potential risks to humans or the environment (using computer spreadsheets, computer models, and the most recent toxicological data), the decision process regarding interim actions was expedited. Exclusion zones, for example, were established in several locations, including an area in which vernal pool fairy shrimp (protected wildlife species) were discovered at

SADA. SADA has also been consistent with its policies by informing the public of the interim actions and potential health risks.

SADA has improved its site management techniques by reviewing assessment data as quickly as possible, thus quickly addressing health risks. When it appeared that there might be a potential risk, immediate steps were taken to avoid an impact. Many of these techniques were temporary, such as containerizing waste or covering contaminated soil. This proactive approach has also enabled SADA to avoid any fines or penalties during the numerous compliance inspections conducted.

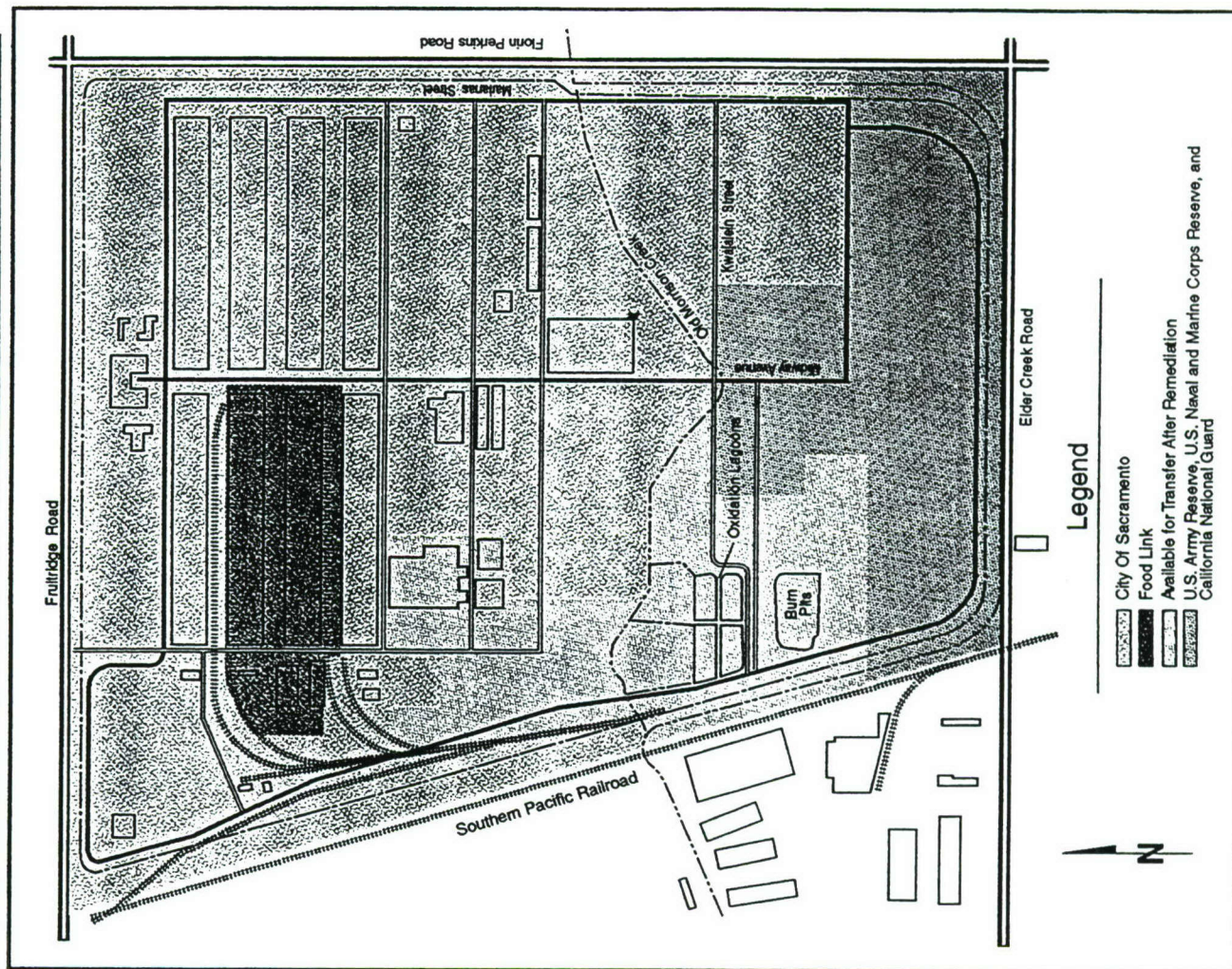
SADA began site investigation activities in 1987. Since that time, SADA has used the most current technology and

information available. SADA was also able to change and grow as new and better information was available. SADA implemented the use of soil gas sampling to assess the extent of contamination. The use of soil gas was an innovative technique that saved time, saved money, and produced a more extensive assessment. One of the most significant changes made at SADA was in the area of risk assessment. SADA adopted the practice of using computer models to measure and estimate the health impacts. One area in particular was with lead. The model used measured the impact of lead to its target organ (blood), not just an overall body impact.

Reuse

As previously mentioned, SADA's teamwork approach has been an integral part of implementing our Fast Track Cleanup program, which has enabled us to complete all the environmental documentation [EBS, Environmental Impact Statement (EIS), FOST, ROD] necessary to effect timely transfer and reuse of the SADA property. Of the 485 acres at SADA, approximately 80 acres have been transferred, by deed, to the Army Reserve, the Naval Reserve, and the Army National Guard. Over 120 acres are currently leased to the City of Sacramento, and an expanded area of approximately 300 acres is scheduled to be transferred, by deed, on March 3, 1995. Approximately 29 acres are currently leased by California Emergency Food Link. This property will also be transferred on March 3, 1995.

The City of Sacramento has negotiated a long-term lease with Packard Bell Computer Company (a Fortune 500 firm), which will bring up to 5,000 new jobs to the SADA site, along with 2,500 auxiliary

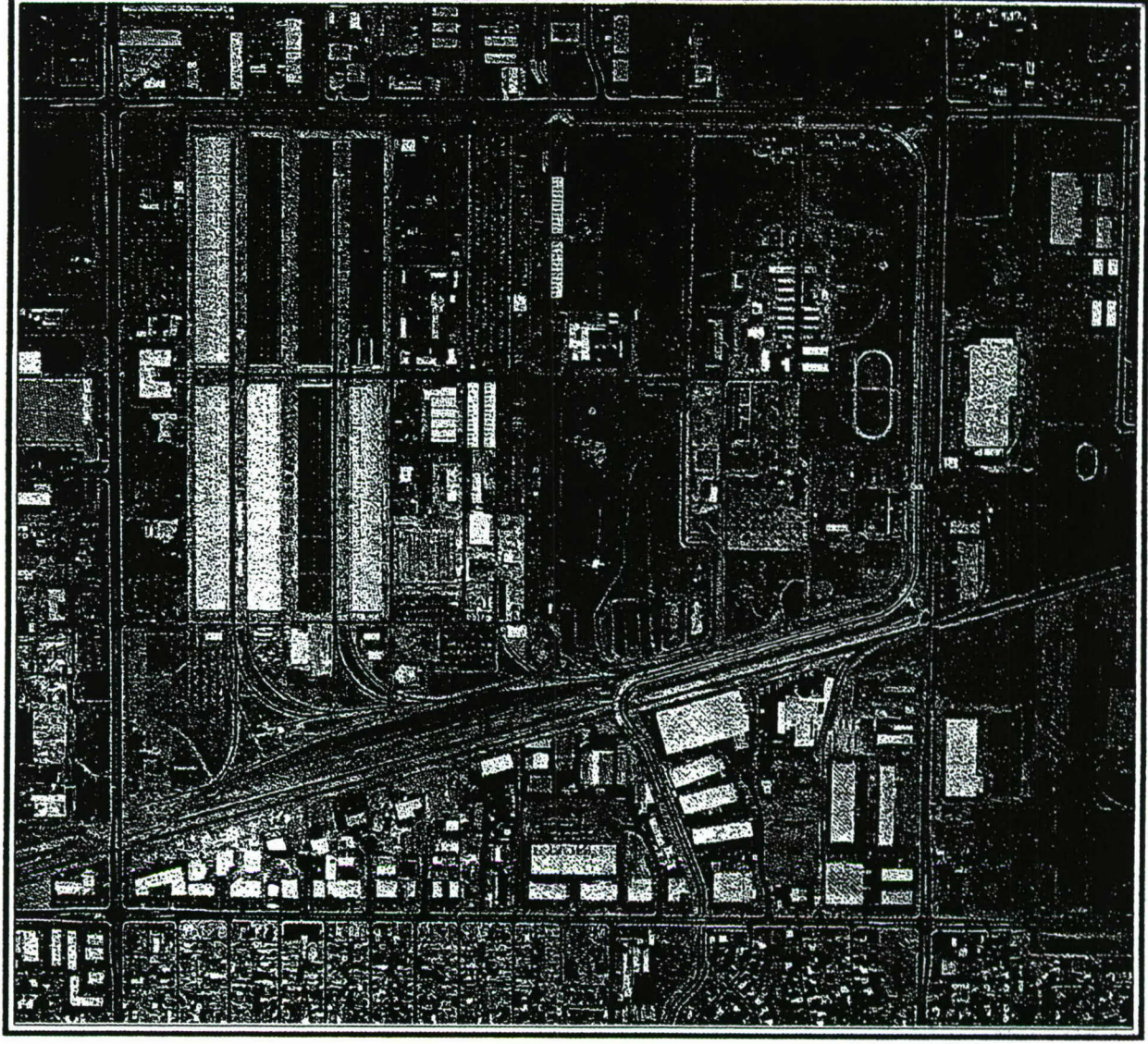


Conclusion

jobs within the local area. Packard Bell is already producing a limited number of computers at SADA and plans to begin full production in April/May 1995. Furthermore, the city has guaranteed a loan package of up to 26 million dollars to assure this reuse is successful. The SADA property transfer, reuse, and environmental programs have both public and political support. SADA's Environmental Cleanup and Reuse Programs have worked as one and can be used as a model for future closures.

In summary, the Sacramento Army Depot Activity is a model of Fast Track Cleanup. The fact that we have met and exceeded all of our goals, awarded all remediation contracts, completed several cleanups, and continue to aggressively clean up the remaining sites shows how teamwork, determination, and public support can overcome obstacles and lead to success. SADA has used and developed several innovative technologies, taken partnerships to new levels, quickly implemented a RAB and empowered them in the decision-making process, provided opportunities for businesses and the community, and reduced the risk to human health and the environment by cleaning the installation to residential standards and making the

area available for unrestricted reuse. Our proactive efforts have resulted in accomplishing all of our goals and allowed us to meet the needs of the environment and the community. We have been able to "Close with Dignity."



The Sacramento Army Depot was established in 1945. The facility encompasses an area of 485 acres and is located approximately seven miles southeast of downtown Sacramento, California.

Appendix H

Reuse Inquiries



Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
AAFES		4 Dec 91		X		Verbal inquiry from retail activity seeking 80 acres to construct facility that will employ 600-650 local personnel.
FMC Corp		10 Jan 92	X	X	X	Verbal inquiry from FMC regarding team strategies between government and contractor regarding Bradley FV upgrades. Verbal conversation will be followed by a planned visit to the depot 7 Feb 92.
HQ 124th ARCOM		19 Feb 92		X	X	The 124th US Army Reserve Command (ARCOM) out of Ft. Lawton, Washington is looking for space for a new Reserve Combat Signal Company and Area Maint Support Activity.
HQ 6USA Reserve Stationing		17 Mar 92	X	X	X	Lieutenant General Mallory, Commander of the 6th USA has tasked the 124th ARCOM (letter did, 26 Feb 92) with expanding it's study of stationing and training all reserve components. SAAD is being considered a site to consolidate these reserve training requirements.
Sacramento Metropolitan Chamber of Commerce DEFAS		19 Mar 92	X	X	X	Sacramento Chamber of Commerce, City, County of Sacramento and SACTO plan a presentation to the Defense Finance and Accounting Service in an attempt to persuade them to locate in Sacramento. They feel SAAD is a prime site for a DEFAS Facility, whose location here would provide jobs.

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
DoD Inspector General for Auditing		30 Apr 92			X	Questionnaire was forwarded to SAAD regarding potential warehouse space for use by the proposed Stockton Fleet Hospital Prepositioning Facility. DoD Inspector General for Auditing is conducting the survey for potential excess federal properties, but the facility would benefit the U.S. Navy.
Calif Army Nat'l Guard		21 May 92		X		California Army National Guard is seeking 25 acres adjacent to the Navy/Marine Reserve building as a proposed site for a new armory.
LaPorte County Civil Def & Emergency Mgmt, Indiana		29 Jul 92	X			Written inquiry from the LaPorte, Indiana. Their Emergency Mgmt Volunteer Organization is interested in the depot's sale/reuse of our emergency siren. They wish to purchase at a nominal cost or be recipient of the siren upon depot closure.
AMC Real Estate Division for the International Children's Medical Alliance		10 Aug 92			X	The International Children's Medical Alliance is seeking 20,000 sq ft of warehouse/office space. The inquiry came telephonically from Mr. Don Carter, AMC Real Estate Division. This is a non DoD Agency who's requirements are immediate and would extend beyond SAAD closure.
US Forest Service		30 Sep 92			X	US Forest Service is seeking office space for a new regional office. Their requirements include 100k sq ft general office space, and 20k sq ft special office space.

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Calif State University Sacramento		14 Oct 92			X	Ms. Karen Domich from CSUS has expressed interest telephonically in a tour of SAAD along with 10 staff members from the university. Their interest is in depot disposal, reuse and leasing. Ms. Domich has been advised to contact the Depot BRAC Office in writing with a list of visitors names and titles.
Area Maint Support Activity AMSA-20G USAR Center, SAAD Sacramento, CA 95813-5049		4 Nov 92	X			USAR Center requesting 30 S280 or equal connexes.
Sacramento District Corps of Engineers CESPK-IM Sacramento, CA 95814-2922	Patricia Hopkins 557-7015	12 Nov 92	X			Request was made for future consideration regarding property transfer of surplus office furniture to the Army Corps of Engineers, Sacto Dist.
Corpus Christi Army Depot SDSCC-MPD Corpus Christi, TX 78419-6000	Glenn Anderson DSN 861-3938	24 Nov 92	X			Corpus Christi Army Depot is upgrading an electronics shop and is interested SAAD's excess electronic equipment. Items specifically mentioned were, electrostatic discharge control complaint work benches, TMDE, circuit board repair and inspection equipment and special tools and equipment.
US Department of Justice Federal Bureau of Prisons		25 Nov 92		X		Federal Bureau of Prisons has expressed interest in 250 acres to build a correctional facility, or 5 to 10 acres if the desired 250 is unavailable, to build a detention center.
University Systems		3 Dec 92	X		X	Representative from the City of Sacramento and Mr. Bill Garcia from University Systems toured the Depot with respect to setting up a "small business" incubator site at the Depot.

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Dept Health & Human Services	Mark Loebel	10 Dec 92	X			Social Security Administration interested in obtaining misc furniture & equipment.
Social Security Administration	Rich Blackwell					
S2D944 PS, P.O. Box 214267	978-4237					
Sacramento, CA 95821						
St. Mark Missionary Baptist Church	Rev Alphonso W. Bryant, Sr.	17 Dec 92	X			Interested in obtaining tables & chairs.
7920 32nd Ave						
Sacramento, CA						
Bureau of Reclamation	Susan Hoffman	22 Dec 92			X	Mid-Pacific Reg Ofc, interested in acquiring facilities for ofc, wrhs, & outside fenced stor space; emp & wrk veh space; motor veh stor; & museum prop. Notification of interest was required by Oct 14, 1992, COE informed them their letter of intent was received to late.
Mid-Pacific Regional Office						
2800 Cottage Way						
Sacramento, CA 95825-1898						
University of California		22 Dec 92			X	UC Davis is interested in locating an area of SAAD that would house a technology transfer center proposed by the local universities.
Davis						
McClellan Air Force Base	Mike Mattos	29 Dec 92	X			Tech & Industrial Support Dir interested in obtaining an injection molding machine. This machine fits into the scope of present & future workload accomplished at their center.
SM-ALC/TI	Stephen Aubuchon					
5201 Bailey Loop	DSN 633-2704					
McClellan AFB CA 95652-2514						
Department of the Interior		8 Jan 93		X	X	Bureau of Reclamation is seeking 500 sq ft of office space, 20,000 sq ft of enclosed warehouse space, 5,000 sq ft of outside fenced storage and appropriate employee and work vehicle spaces.
Bureau of Reclamation						
McClellan Air Force Base	Jim Barney	13 Jan 93	X			Commodities Directorate, Software Spt Br interested in obtaining excess personal computers and dot matrix printers.
SM-ALC/LIAS	DSN 633-3329					
5509 Bailey Loop						
McClellan AFB, CA 95652-1134						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Office of the Adjutant Gen	MAJ Larry Dixon	26 Jan 93	X			The California National Guard is interested in acquiring gym/exercise equipment for utilization at it's many armories located throughout the state.
Director of Logistics	916-854-3733					
2829 Watt Ave - P.O. Box 214405						
Sacramento, CA 95821-0405						
General Scientific Corp.		29 Jan 93	X		X	GSC is requesting SAAD's computer repair facility including a list of test equipment, test benches and trouble shooting software required to support the repair facility. They are offering first right of employment to those employees currently working in SAAD's facility.
Marine Corps Multi Commodity	SSgt Sullivan	1 Feb 93	X			Multi Commodity Maint Center interested in obtaining miscellaneous equip associated with the repair of electronics & communications equip. Requested authorization to visit to review such equip.
Maintenance Center	DSN 282-7147/7229					
Repair Division						
Marine Corps Logistics Base						
Barstow, CA 92311-5015						
Sacramento City Reuse Comm		8 Feb 93			X	Mr. Mike Kirk from the Sacto City Reuse Commission inquired into 100,000 sq ft of heated and air conditioned warehouse space.
Calif State Unvi Sacramento		10 Feb 93		X	X	Reuse Tour - Exploratory visit regarding areas of potential interest.
(CSUS)						
Social Security Admin Sacramento		17 Feb 93	X			Reuse Visit - Interested in obtaining admin office furniture, modulas & office ADP equip.
Corpus Christi Army Depot	Glenn Anderson	17 Mar 93	X			Requested electrostatic discharge (ESD) control equip, PCB repair equip, and related special tools.
SDSCC-MPD						
Corpus Christi, TX 78419-6000						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Sierra Army Depot	Fred Winters	17 Mar 93	X			Interested in obtaining personal computers, printers, CD ROM's, furniture & production equip.
SDSSI-PPC (18)	DSN 855-4505					
Herlong, CA 96113-5220						
FMS Corp		18 Mar 93	X		X	The FMS Corp, a defense contractor has expressed interest in leasing areas of SAAD, with special interest in the spray paint areas.
Hawthorne Army Ammunition Plant	Marily Berry	25 Mar 93	X			Ops Review Div interested in obtaining personal computers, printers, CD ROM's, furniture & prod equip.
SMCHW-ORP	DSN 830-7591					
DefDefense Logistics Agency	Stan Kromfols	29 Mar 93	X			Request for office & training room furniture.
DDRW-K	DSN 462-2626					
Stockton, CA 95296-0450						
University Service		30 Mar 93		X	X	Reuse Tour - Corporate Business Incubator
Bureau of Reclamation		16 Apr 93			X	Dept of the Interior, Bureau of Reclamation is seeking 500 sq ft of office space, 20,000 sq ft of warehouse space, and 5,000 sq ft of fenced area for centralized storage for it's Sacramento area entities.
Convention Center		26 Apr 93		X	X	Reuse Tour
Office Public Works						
Fish & Wildlife Service	Linda White	28 Apr 93	X			Ecological Services, Sac Field Ofc interested in obtaining systems furniture & computer equipment.
Ecological Services	978-4613					
Sacramento Field Office						
2800 Cottage Way, Rm E-1803						
Sacramento, CA 95825-1846						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Defense Info Sys Agency	Constance Weber	29 Apr 93	X			Multifunctional Info Processing Activity interested in obtaining furniture & misc ADP equipment.
Processing Activity	DSN 793-7433					
DITSO-GIR-RP						
Rock Island, IL 61299-7560						
Federal Bureau fo Prison's		10 May 93		X		Reuse Tour - Looking at Metropolitan detention center, 20 acres, new construction.
McClellan Air Force Base	Patricia Reynard	17 May 93	X			Tech & Industrial Support Dir requested transfer of MSD-100 fiberglass chopper equip, MSD-100 laboratory equip and MSD-100 plastic injection molding equip.
SM-ALC/TIEC	DSN 839-3542					
5201 Bailey Loop	Chris Frank					
McClellan AFB CA 95652-2514	DSN 633-3810					
Television-Audio Support Activity	Franklyn Gardner	21 May 93	X			Logistics Mgt Div requested excess equip from cost center 5G660 be transferred to cost center 7E110.
ASQB-RTV-LA	DSN 839-3372					
(T-ASA) Sacramento Army Depot						
Sacramento, CA 95813-5019						
Tooele Army Depot	Kristen Rael	26 May 93	X			Dir/Res Mgt, Visual Info Sys Br interested in obtaining excess Television-Audio Visual Support Activity (T-ASA) equipment.
SDSTE-IM	DSN 790-3103					
Tooele, UT 84074-5000						
Defense Logistics Agency	Barbara Gray	2 Jun 93	X			Defense Distr Region West, Stockton, CA requesting excess furniture and equipment.
DDRW-PSO	DSN 462-2428					
P.O. Box 960001						
Stockton, CA 95296-0800						
US Forest Service		11 Jun 93		X	X	Reuse Tour - Building 150

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Def Distribution Region West	Ms. Hall	29 Jun 93	X			Requested 13 furniture modules be transferred to DDJC, Sharpe Facility, in support of the BOM mission being relocated there.
Def Distr Depot San Joaquin	DSN 462-3208					
DDJC-D						
P.O. Box 960001						
Stockton, CA 95296-0120						
City of Sacramento						
Fire Dept		9 Jul 93		X	X	Property, bldg 300, to be used as a training facility. Apply for conveyance as an education facility. Method of Conveyance - Public Benefit Discount
1231 I St., #401						
Sacramento City Unified School District		23 Jul 93		X	X	Proposed use as a center for operation, maintenance & storage of school buses; district warehouse; maintenance shops & materials storage; & operation of district custodial services. Method of Conveyance - Public Benefit Discount
Los Rios Community College District, Sacramento		23 Jul 93		X	X	The District's interest is to acquire approx 50,000 sq ft of existing warehouse space in support of educational programs. Method of Conveyance - Public Benefit Discount
CA State Dept of Transportation		23 Jul 93		X	X	Interested in acquiring 40-50 acres for a new centralized equip shop facility, including storage area. Method of Conveyance - Public Benefit Discount or Negotiated Sale
City of Sacramento		26 Jul 93		X	X	Proposed use as a Manufacturing Technology Center, Insurance Institute and Archeological Repository & Info Center. It is anticipated all facilities will us existing structures. Method of Conveyance - Public Benefit Discount
CA State Univ Sacramento (CSUS)						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Mountain Home Air Force Base	TSgt Rich	27 Jul 93	X			366th Communications Squadron interested in obtaining dolly lifts, cargo trucks, fork lifts, and 55 gal drums.
366 Communication Squadron	TSgt Hanson					
Mountain Home AFB, ID 83648	DSN 857-4575					
CA State Dept of Corrections		27 Jul 93		X	X	Interested in acquiring property for correctional purposes, State Prison. Method of Conveyance - Public Benefit Discount
Bureau of Reclamation		28 Jul 93			X	Mid-Pacific Reg Ofc, interested in acquiring facilities for ofc, wrhs, & outside fenced stor space; emp & wrk veh space; motor veh stor; & museum prop. Notification of interest was required by Oct 14, 1992, COE informed them their letter of intent was received to late.
Quartz Valley Reservation	Ms. Cora B. Thom	29 Jul 93	X			Interested in obtaining office furniture & equip.
Tribal Office, P.O. Box 737	Tribal Manager					
Etna, CA 96027	916-467-3307					
Sac Regional County Solid Waste Authority		3 Aug 93		X		Purchase approx 150-200 acres for construction of composting and processing facility. Consisting of composting fields, composting and collection equip storage, emp parking, ofc, maint shop, processing bldg & retail facility. Method of Conveyance - Negotiated Sale
State Economic Development Dept		17 Aug 93		X	X	Reuse Tour
McClellan Air Force Base	Jerlyn Gjerde	23 Aug 93	X			Space & C3 Mgt Dir, Manuf Spec Proj Flight interested in obtaining misc ADP equip.
SM-ALC/LHHD	DSN 633-4716					
3701 Dudley Blvd						
McClellan AFB, CA 95652-1634						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Sacramento Fire Depot		30 Aug 93		X	X	Reuse Tour - Inspect bldg 300, TMDE Ops again
Dept of Justice	Shirley Younessian	30 Aug 93	X			Letter requesting a list of personal computers, printers, monitors, software, small tables, and typing stands that are listed as excess.
Immigration & Naturalization Srvc	415-705-4556					
District Director for Management	Toni Quon					
Appraisers Bldg	415-705-4513					
630 Sansome St						
San Francisco, CA 94111						
Dept of Corrections		10 Sep 93		X		Reuse Tour
Cal Electric Car Co.		23 Sep 93		X	X	Reuse Tour
Atlantic Pacific Electronics	Charlie Driscoll	23 Sep 93			X	Telcon with Mr. Beresford, proposed use of warehouse 7-5 and a CARC fac such as warehouse 7-6.
Sacramento, CA	687-7679					To repair 8x20 shelters which are currently being bid for on a govt contract.
Vietnam Vets of Sacramento	David Farrell	7 Oct 93		X	X	Reuse Tour
CSUC - Engineering & Computer		13 Oct 93	X		X	Reuse Tour - Actg Dean of the Computer Science
Science Dept						Dept looking at computers equip and bldg space.
Atlantic Pacific Electronics		13 Oct 93			X	Reuse Tour - Reference letter received Sep 93 interested in CARC fac and a warehouse to repair shelters
373d Mil Intelligence Battalion	MSG Woolverton	13 Oct 93	X			Intelligence Battalion interested in getting a shelter for a 2 1/2 ton truck equipped with lights/electrical wiring
AFRC-AWA-MIB-TEN-OPS	DSN 859-7821					
Bldg 1101, Oakland Army Base						
Oakland, CA 94626-5035						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Sac Fire Depot		14 Oct 93		X	X	Reuse Tour - Inspect bldg 300, TMDE Ops again
Master Mark - Garden Products		18 Oct 93		X	X	Reuse Tour
Army Audit Agency	Dick Dorisse 643-0980	27 Oct 93			X	Mr. Dorisse phoned Mr. Stabb (CEA) wanted office space for 3 individuals for 12 to 18 months.
BLM		29 Oct 93			X	Reuse Tour - Revisit SigInt and bldg 150 Admin area
BLM - Calif State Office	Jim Anger 978-4707	22 Nov 93	X			Interested in excess office furniture, chairs, and computer equipment.
Branch of Administrative Services 2800 Cottage Way, RM E-2845 Sacramento, CA 95825-1889						
Dept of Corrections		24 Nov 93		X	X	Reuse Tour - Revisited south east corner of bldg 555, surveyed access to available land.
Forest Srvc, Fire & Aviation		1 Dec 93			X	Reuse Tour - Interested in office space.
CA Emergency Food Link	Bob Pitner	6 Dec 93			X	Reuse Tour - Interested in available warehouse space and cold storage area.
U.S. Forest Service		7 Dec 93			X	Reuse Tour - Interest in acquiring office space.
CA Reg Law Enforcement Unit						
Alta Plating	Don Nole	9 Dec 93			X	Reuse Tour - Touring plating shop and waste water treatment facility.
Defense Logistics Agency	Leonard Chartraw	9 Dec 93	X			Inquiry for equipment, tooling, and dies relative to the Telebom Project.
Industrial Plan Eq Repair fac	DSN 466-7238/7579					
Defense General Supply Center						
DGSC-H						

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Stockton, CA 95203-4901						
CA Emergency Food Link	Bob Pitner	10 Dec 93			X	Reuse Tour - Revisit, warehouse space and cold storage area.
CA Emergency Food Link	Bob Pitner	15 Dec 93			X	Reuse Tour - Revisit, warehouse space and cold storage area.
Department of the Air Force 9 CS/SCXC 5801 C Str, Rm 155 Beale AFB, CA 95903-1539	MSgt Joel Klein DSN 368-2918/19	15 Dec 93	X			Letter inquiring about excess computers and software
Defense Investigative Service ATTN: D52SR 2973 Fulton Ave Sacramento, CA 95821-4988	Don Risenhoover 978-4182	15 Dec 93	X			Letter inquiring about availability of excess computers and software
School District	William Grundy	20 Dec 93			X	Reuse Tour - Interested in excess portable bldgs.
Auto Salvage Co.		5 Jan 94		X	X	Reuse Tour - Interested in availability of storage space for vehicles
CA Emergency Food Link	Bob Pitner	7 Jan 94			X	Reuse Tour - Revisit, warehouse space and cold storage area.
Defense Logistics Agency Defense General Supply Center Industrial Plant Eq Repair Fac DGSC-H Stockton, CA 95203-4901	Leonard Chartraw DSN 466-7238/7579	10 Jan 94	X			Letter requesting misc equipment to support the Teleborn Project be transferred to DGSC-H.

Inquiring Agency and Areas of Interest

Inquiring Agency	Point-of-Contact	Date of Inquiry	Equip/ Furniture	Real Estate	Bldgs	Remarks/Summary
Department of the Army	Joseph Gall	10 Jan 94	X			Letter requesting materiel handling, construction, dining and lodging facility and ADP equipment, as well as expendable equipment and supplies supporting these areas.
Civilian Marksmanship Spt Det	DSN 346-4109					
P.O. Box 576, bldg 650						
Erie Industrial Park						
Prot Clinton, OH 43452						
U.S. Forest Service	Erne Tordsen	12 Jan 94			X	Reuse Tour - Revisit, office space in bldg 150
	415-705-1279					
Dept of Corrections	Janice Williams	12 Jan 94		X		Reuse Tour - Revisit, inspecting proper interested in.
	916-445-7112					
Office of the Adjutant General	COL Chris Pantos	13 Jan 94	X			Letter inquiring about picking up 2 treadmills and 2 stairmasters from our gym.
Calif National Guard	854-3700					
9800 Goethe Road						
P.O. Box 269101						
Sacramento, CA 95826-9101						
CA Emergency Food Link	Bob Piner	20 Jan 94			X	Meeting with COE, City, and Depot Orgs to discuss leasing procedures.
	916-688-1203					
McClellan AFB	Janice Lancaster	20 Jan 94	X		X	Reuse Tour - Overview tour for incoming staff
Maintenance Staff	916-643-6926					Viewed Bead Blast, Paint Area and CARC Facility
Employment Development Dep	Jack Zalte	25 Jan 94			X	Reuse Tour-Standard Winshield tour.
	916-653-2481					Toured Whse 6-5



Appendix I

Glossary of Terms and List of Acronyms



Environmental Glossary

Abandoned Well

A well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose.

Abatement

Reducing the degree or intensity of, or eliminating, pollution.

Absorption

The penetration of a substance into or through another.

Accuracy

The degree of closeness between a measured value and a true or expected value, usually measured as the percent recovery of a method spike.

Action Levels

In the Superfund program, the existence of a contaminant concentration in the environment high enough to warrant action or trigger a response under SARA and the National Oil and Hazardous Substances Contingency Plan. The term can be used similarly in other regulatory programs.

Activated Carbon

A highly adsorbent form of carbon used to remove odors and toxic substances from liquid or gaseous emissions. In waste treatment it is used to remove dissolved organic matter from waste water. It is also used in motor vehicle evaporative control systems.

Active Ingredient

In any pesticide product, the component which kills, or otherwise controls, target pests. Pesticides are regulated primarily on the basis of active ingredients.

Adaptation

Changes in an organisms structure that help it adjust to its surroundings.

Administrative Record

A project file containing information used by the lead agency to make its decision on the selection of a response action under CERCLA. The file will be established in locations near the site or facility and is to be available for public review. A duplicate file is located in a central location, such as a Regional or State office.

Adsorption

Process by which atoms, molecules or ions are taken up and retained on the surfaces of solids by chemical or physical binding.

AEHA

Army's Environmental Hygiene Agency

Aeration Tank

A chamber used to inject air into water.

Aerobic

Life or processes that require, or are not destroyed by, the presence of oxygen.

Air Pollution

The presence of contaminant or pollutant substances in the air that do not disperse properly and interfere with human health or welfare, or produce other harmful environmental effects.

Air Quality Criteria

The levels of pollution and lengths of exposure above which adverse health and welfare effects may occur.

Air Quality Standards

The level of pollutants prescribed by regulations that may not be exceeded during a specified time in a defined area.

Air Stripping

A treatment system that removes, or "strips," volatile organic compounds from contaminated groundwater or surface water by forcing an airstream through the water and causing the compounds to evaporate.

Agricultural Pollution

The liquid and solid wastes from farming, including: runoff and leaching of pesticides and fertilizers; erosion and dust from plowing; animal manure and carcasses; crop residues; and debris.

Air Contaminant

Any particulate matter, gas, or combination thereof, other than water vapor or natural air.

Air Mass

A widespread body of air that gains certain meteorological or polluted characteristics, e.g., a heat inversion or smogginess while set in one location. The characteristics can change as it moves away.

Air Pollutant

Any substance in air which could, if in high enough concentration, harm man, other animals, vegetation, or material.

Anaerobic

A life or process that occurs in, or is not destroyed by, the absence of oxygen.

Analytes

The chemicals for which a sample is analyzed.

Antibodies

Proteins produced in the body by immune system cells in response to antigens, and capable of combining with antigens.

Antigen

A substance that causes production of antibodies when introduced into animal or human tissue.

Applied Action Level

Recommended drinking water quality guidelines developed by DHS to identify contaminant concentrations that pose potential health risks.

Aquifer

An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs. Zone below the ground surface capable of producing water.

ARARs

Applicable or Relevant and Appropriate Requirements: Federal, state or local standards, requirements, criteria, or limitations determined to be legally applicable or relevant to the Superfund site.

Arbitration

A process for the resolution of disputes. Decisions are made by an impartial arbitrator selected by the parties. These decisions are usually legally binding.

Area Source

Any small source of nonnatural air pollution that is released over a relatively small area by which cannot be classified as a point source. Such sources may include vehicles and other small fuel combustion engines.

Asbestos

A mineral fiber that can pollute air or water and cause cancer when inhaled. EPA has banned or severely restricted its use in manufacturing and construction.

Assimilation

The ability of a body of water to purify itself of pollutants.

Atmosphere

The whole mass of air surrounding the earth, composed largely of oxygen and nitrogen.

Attenuation

The process by which a compound is reduced in concentration over time, through adsorption, degradation, dilution, and/or transformation.

Attrition

Wearing or grinding down of a substance by friction. A contributing factor in air pollution, as with dust.

BEC

Base Environmental Coordinator. Onsite community liaison for environmental client at a closure or realignment project.

BTC

Base Transition Coordinator.

Background level

Amount of pollutants present in the surrounding soil due to natural sources.

Bacteria

Microscopic living organisms which can aid in pollution control by consuming or breaking down organic matter in sewage, or by similarly acting on oil spills or other water pollutants. Bacteria in soil, water or air can also cause human, animal and plant health problems. The singular form of bacteria is bacterium.

Barrier Well

A well installed to intercept and pump out a plume of contaminated groundwater.

Bentonite Grout

An aluminum silicate clay to which a small amount of magnesium oxide is added that swells and forms a viscous suspension when mixed with water. Upon drying, it forms a hard cement-like material. It is commonly used to refill and seal soil coring holes and as a fill or grout material around well casings or to fill and seal off abandoned wells.

Bioassay

Using living organisms to measure the effect of a substance, factor, or condition by comparing before - and after - data. Term is often used to mean cancer bioassays.

Borehole

An uncased well drill hole.

By-product

Material, other than the principal product, that is generated as a consequence of an industrial process.

Cadmium (Cd)

A heavy metal element that accumulates in the environment.

Cal EPA

California Environmental Protection Agency

CAM WET, California Assessment Manual

A procedure for evaluating the leachability of certain metals, pesticides, or organics from a solid or semi-solid hazardous waste sample.

Cancer

The development of a malignant tumor or abnormal formation of tissue.

Carbon Adsorber

An add-on control device which uses activated carbon to absorb volatile organic compounds (VOCs) from a gas stream. The VOCs are later recovered from the carbon.

Carbon Adsorption

A treatment system designed to remove contaminants from groundwater and surface water by forcing the contaminated water through tanks containing activated carbon, a specially treated material that attracts the contaminants.

Carbon Dioxide (CO₂)

A colorless, odorless, nonpoisonous gas which results from fossil fuel combustion and is normally a part of the ambient air.

Carbon Monoxide (CO)

A colorless, odorless, poisonous gas produced by incomplete fossil fuel combustion.

Carcinogen

Any substance that can cause or contribute to the production of cancer.

Carcinogenic
Cancer-producing substance.

Casing
Steel or plastic tubing that is welded or screwed together to line a borehole.

CERCLA
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), also known as Superfund.

CFR
Code of Federal Regulations

Chain-of-Custody
Written forms indicating the date and time of sampling events, procedures for handling of the sample and date and time of transfer from sampler to laboratory. The protocol is to insure the integrity of samples and resulting analytical results.

Characteristic
Any one of the four categories used in defining hazardous waste: ignitability, corrosivity, reactivity, and toxicity.

Chemical
Any element, chemical compound or mixture of elements and/or compounds.

Chemical Treatment
Any one of a variety of technologies that use chemicals or a variety of chemical processes to treat waste.

Chemicals of Potential Concern
Chemicals that are potentially site-related and whose data are of sufficient quality for use in the quantitative risk assessment.

Chlorinated Hydrocarbons
These include a class of persistent, broad-spectrum insecticides, that linger in the environment and accumulate in the food chain. Among them are DDT, aldrin, dieldrin, heptachlor, chlordane, lindane, endrin, mirex, hexachloride, and toxaphene. Other examples include TCE, used as an industrial solvent.

Chlorinated Solvent
An organic solvent containing chlorine atoms, e.g., methylene chloride and 1,1,1-trichloromethane, which are used in aerosol spray containers and in traffic paint.

Chlorination
The application of chlorine to drinking water, sewage, or industrial waste to disinfect or to oxidize undesirable compounds.

Chlorinator
A device that adds chlorine, in gas or liquid form, to water or sewage to kill infectious bacteria.

Chlorofluorocarbons (CFCs)

A family of inert, nontoxic, and easily liquefied chemicals used in refrigeration, air conditioning, packaging, insulation, or as solvents and aerosol propellants. Because CFCs are not destroyed in the lower atmosphere, they drift into the upper atmosphere where their chlorine components destroy ozone.

Cleanup

Actions taken to deal with a release or threat of release of a hazardous substance that could affect humans and/or the environment. The term "cleanup" is sometimes used interchangeably with the terms remedial action, removal action, response action, or corrective action.

Closed-Loop Recycling

Reclaiming or reusing wastewater for nonpotable purposes in an enclosed process.

COE

United States Army Corps of Engineers

Coagulation

A clumping of particles in wastewater to settle out impurities. It is often induced by chemicals such as lime, alum, and iron salts.

Combustion

Burning, or rapid oxidation, accompanied by release of energy in the form of heat and light. A basic cause of air pollution.

Combustion Product

Substance produced during the burning or oxidation of a material.

Command Post

Facility located at a safe distance upwind from an accident site, where the on-scene coordinator, responders, and technical representatives can make response decisions, deploy manpower and equipment, maintain liaison with news media, and handle communications.

Comment Period

Time provided for the public to review and comment on a proposed action or rulemaking after it is published. A minimum 3-week period is held to allow community members to review and comment on draft RI/FS and proposed plans.

Community Relations

The effort to establish two-way communication with the public to create understanding of cleanup programs and related actions, to assure public input into decision-making process related to affected communities, and to make certain that the depot is aware of and responsive to public concerns. Specific community activities are required in relation to Superfund remedial actions.

Community Relations Plan (CRP)

A formal plan outlining community relation activities at a Superfund site. The plan is used to develop open communication and understanding between interested parties.

Community Water System

A public water system which serves at least fifteen service connections used by year-round residents or regularly serves at least twenty-five year-round residents.

Compaction

Reduction of the bulk or solid waste by rolling and tamping.

Compost

A mixture of garbage and degradable trash with soil in which certain bacteria in the soil break down the garbage and trash into organic fertilizer.

Concentration

The amount of chemical present per amount of sample.

Cone of Depression

A cone-shaped depression that is formed in a water table when groundwater is removed.

Confined Aquifer

An aquifer in which groundwater is confined under pressure that is significantly greater than atmospheric pressure.

Consent Decree

A legal document, approved by a judge, that formalizes an agreement reached between EPA and potentially responsible parties (PRPs) through which PRPs will conduct all or part of a cleanup action at a Superfund site; cease or correct actions or processes that are polluting the environment; or otherwise comply with regulations where the PRP's failure to comply caused EPA to initiate regulatory enforcement actions. The consent decree describes the actions PRPs will take and may be subject to a public comment period.

Conservation

A voiding waste of, and renewing when possible, human and natural resources. The protection, improvement, and use of natural resources according to principals that will assure their highest economic or social benefits.

Contaminant

Any physical, chemical, biological, or radiological substance or matter that has an adverse affect on air, water, or soil.

Contaminant Plume

The lateral and vertical extent of a contaminant in air, water or soil.

Contingency Plan

A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or other accident that release toxic chemicals, hazardous wastes, or radioactive materials which threaten human health or the environment (See: National Oil and Hazardous Substances Contingency Plan.)

Contract Laboratory Program (CLP)

Analytical program developed for Superfund waste site samples to fill the need for legally defensible analytical results supported by a high level of quality assurance and documentation.

Contract Labs

Laboratories under contract to EPA, which analyze samples taken from wastes, soil, air and water or carry out research projects.

Coolant

A liquid or gas used to reduce the heat generated by power production in nuclear reactors, electric generators, various industrial and mechanical processes, and automobile engines.

Cost Recovery

A legal process by which potentially responsible parties who contributed to contamination at a Superfund site can be required to reimburse the Trust Fund for money spent during any cleanup actions by the federal government.

Cost-Effective Alternative

An alternative control or corrective method identified after analysis as being the best available in terms of reliability, permanence, and economic considerations. Although costs are one important consideration, when regulatory and compliance methods are being considered, such analysis does not require EPA to choose the least expensive alternative. For example, when selecting a method for cleaning up a site on the Superfund National Priorities List, the Agency balances costs with the long term effectiveness of the various methods proposed.

Cover

Vegetation or other material providing protection as ground cover.

Cover Material

Soil used to cover compacted solid waste in a sanitary landfill.

Criteria

Descriptive factors taken into account by EPA in setting standards for various pollutants. These factors are used to determine limits on allowable concentration levels and to limit the number of violations per year. When issued by EPA, the criteria provide guidance to the states on how to establish their standards.

Criteria Pollutants

The 1970 amendment to the Clean Air Act required EPA to set National Ambient Air Quality Standards for certain pollutants known to be hazardous to human health. EPA has identified and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide. The term, "criteria pollutants" derives from the requirement that EPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised.

DOD

United States Department of Defense

DDT

The first chlorinated hydrocarbon insecticide (chemical name: Dichloro-Diphosphyl-Trichloromethane). It has a half-life of fifteen years and can collect in fatty tissues of certain animals. EPA banned registration and interstate sale of DDT for virtually all but emergency uses in the United States in 1972 because of its persistence in the environment and accumulation in the food chain.

DTSC

California Department of Toxic Substances Control

Data Quality Objectives (DQO)

Statements that specify the data needed to support decisions regarding remedial response activities.

Decomposition

The breakdown of matter by bacteria and fungi. It changes the chemical makeup and physical appearance of materials.

Degradation

The process by which a chemical is reduced to a less complex form.

Delist

Use of the petition process to have a facility removed from the National Priorities List once clean-up activities at the site have been completed.

Designated Uses

Those water uses identified in state water quality standards which must be achieved and maintained as required under the Clean Water Act. Uses can include cold water fisheries, public water supply, agriculture, etc.

Designer Bugs

Popular term for microbes developed through biotechnology that can degrade specific toxic chemicals at their source in toxic waste dumps or in groundwater.

Detection Limit

The lowest amount of an analyte which can be reported with appropriate precision and accuracy. Where no chemical has been found, it is often reported as "less than" the detection limit value (e.g., <0.1 ppm).

Digestion

The process of isolating metals from a solid sample by heating with nitric acid.

Digest

The remaining solution after a sample has been digested is called a digest.

Dilution Ration

The relationship between the volume of water in a stream and the volume of incoming water. It affects the ability of stream to assimilate waste.

Dioxin

Any of a family of compounds known chemically as dibenzo-p-dioxins. Concern about them arises from their potential toxicity and contaminants in commercial products. Tests on laboratory animals indicate that it is one of the more toxic man-made chemicals known.

Direct Discharge

A municipal or industrial facility which introduces pollution through a defined conveyance or system; a point source.

Disposal

Final placement or destruction of toxic, radioactive, or other wastes; surplus or banned pesticides or other chemicals; polluted soils; and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming deep well injections, ocean dumping, or incineration.

Dosimeter

An instrument that measures exposure to specific contaminants.

Downgradient

A location at a point which is in the direction of a contaminants migration, typically used in relation to groundwater.

Drainage Well

A well installed to drain water at or near ground surface.

Dredging

Removal of mud from the bottom of water bodies using a scooping machine. This disturbs the ecosystem and causes silting that can kill aquatic life. Dredging of contaminated muds can expose aquatic life to heavy metals and other toxics. Dredging activities may be subject to regulation under Section 404 of the Clean Water Act.

Dry Well (Dry Hole)

A well that does not extend into the water table or saturated zone.

Dump

A site used to dispose of solid wastes without environmental controls.

Dust

Particles light enough to be suspended in air.

Ecological Impact

The effect that a man-made or natural activity has on living organisms and their nonliving (abiotic) environment.

Ecology

The relationship of living things to one another and their environment, or the study of such relationships.

Effluent

Wastewater-treated or untreated - that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.

Eminent Domain

Government taking or forced acquisition - of private land for public use, with compensation paid to the landowner.

Emission

Pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities; from residential chimneys; and from motor vehicle, locomotive, or aircraft exhausts.

Emissions Standard

The maximum amount of air polluting discharge legally allowed from a single source, mobile or stationary.

Endangered Assessment

A study conducted to determine the nature and extent of contamination at a site on the National Priorities List and the risk posed to public health or the environment. EPA or the state conduct the study when a legal action is to be taken to direct potentially responsible parties to clean up a site or pay for the cleanup. An endangered assessment supplements a remedial investigation.

Endangered Species

Animals, birds, fish, plants, or other living organisms threatened with extinction by man-made or natural changes in their environment. Requirements for declaring a species endangered are contained in the Endangered Species Act.

Environment

The sum of all external conditions affecting the life, development and survival of an organism.

Environmental Assessment

A written environmental analysis which is prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require preparation of a more detailed environmental impact statement.

Environmental Audit

1. An independent assessment of the current status of a party's compliance with applicable environmental requirements.
2. An independent evaluation of a party's environmental compliance policies, practices, and controls.

Environmental Impact Statement

A document required of federal agencies by the National Environmental Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, it describes the positive and negative effects of the undertaking and lists alternative actions.

EPA

The U.S. Environmental Protection Agency; established in 1970 by Presidential Executive Order, bringing together parts of various government agencies involved with the control of pollution.

Erosion

The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road building, or timber-cutting.

Exposure

The amount of radiation or pollutant present in an environment which represents a potential health threat to the living organisms in that environment. Contact of an organism with a chemical or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (e.g., skin, lungs, gut) and available for absorption.

Exposure Point

A point of potential contact between and organism and a chemical or physical agent.

Extract

The liquid solution remaining after a sample has been contacted with an aqueous solution (for inorganics) or an organic solvent (for organics). The extract, containing the chemical of interest, is then processed and analyzed by AA, ICP, or wet chemical techniques (inorganics and metals) or by GC or HPLC (organics).

Extractables

Those semi-volatile organic chemicals which are best analyzed for by extraction from a sample matrix.

Extraction

The process of isolating chemicals of interest from a sample matrix (e.g., water, soil) when the sample cannot be analyzed directly.

False Negative Result

A result which was negative and should not have been. Trip Blanks and/or Method Blanks can be run to check for false negatives.

False Positive Result

A result which was positive and should not have been. Trip Blanks and/or Method Blanks can be run to check for false positives.

Federal Facilities Agreement (FFA)

Memorandum of understanding between the federal facility (Sacramento Army Depot), EPA, and the state regulatory agencies. The FFA identifies the problem and strategy for remedy selection.

Feasibility Study

1. Analysis of the practicability of a proposal; e.g., a description and analysis of the potential cleanup alternatives for a site or alternatives for a site on the National Priorities List. The feasibility study usually recommends selection of a cost effective alternative. It usually starts as soon as the remedial investigation is underway; together, they are commonly referred to as the "RI/FS". The term can apply to a variety of proposed corrective or regulatory actions.

2. In research, a small-scale investigation of a problem to ascertain whether or not a proposed research approach is likely to provide useful data.

Federal Register (FR)

Daily federal government publication that announces all proposed and final regulations.

Fermentation

Chemical reactions accompanied by living microbes that are supplied with nutrients and other critical conditions such as heat, pressure, and light that are specific to the reaction at hand.

Fertilizer

Materials such as nitrogen and phosphorus that provide nutrients for plants. Commercially sold fertilizers may contain other chemicals or may be in the form of processed sewage sludge.

Field Investigation (FI)

The process in which a site is investigated.

Field Sampling Plan

Provides guidance for all fieldwork by defining in detail the sampling and data-gathering methods to be used on a project.

Filtration

A treatment process, under the control of qualified operators, for removing solid (particulate) matter from water by passing the water through porous media such as sand or a man-made filter. The process is often used to remove particles that contain pathogenic organisms.

Flow Path

The direction in which groundwater is moving.

Flowmeter

A gauge that shows the speed of wastewater moving through a treatment plant. Also used to measure the speed of liquids moving through various industrial processes.

Flume

A natural or man-made channel that diverts water.

Fluorides

Gaseous, solids, or dissolved compounds containing fluorine that results from industrial processes.

Fluorocarbon (FCs)

Any of a number of organic compounds analogous to hydrocarbons in which one or more hydrogen atoms are replaced by fluorine. Once used in the United States as a propellant in aerosols, they are now primarily used in coolants and some industrial processes. FCs containing chlorine are called chlorofluorocarbons (CFCs). They are believed to be modifying the ozone layer in the stratosphere, thereby allowing more harmful solar radiation to reach the Earth's surface.

Fracture

A break in the geological formation, e.g., a shear or fault.

Fresh Water

Water that generally contains less than 1,000 milligrams per liter of dissolved solids.

General Permit

A permit applicable to a class or category of dischargers.

Generator

A facility or mobile source that emits pollutants into the air or releases hazardous wastes into water or soil.

Gradient

The rate of inclination of a slope. The degree of deviation from the horizontal.

Granular Activated Carbon Treatment

A filtering system often used in small water systems and individual homes to remove organics. GAC can be highly effective in removing elevated levels of radon from water.

Greenhouse Effect

The warming of the Earth's atmosphere caused by a build-up of carbon dioxide or other trace gases; it is believed by many scientists that this build-up of carbon dioxide or other trace gases; it is believed by many scientists that this build-up allows light from the sun's rays to heat the Earth but prevents a counterbalancing loss of heat.

Ground Cover

Plants grown to keep soil from eroding.

Groundwater

The supply of fresh water found beneath the Earth's surface, usually in aquifers, which is often used for supplying wells and springs.

Habitat

The place where a population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and nonliving.

Half-life

1. The time required for a pollutant to lose half its effect on the environment. For example, the half-life of DDT in the environment is fifteen years, of radium, 1,580 years.
2. The time required for half of the atoms of a radioactive element to undergo decay.
3. The time required for the elimination of one half a total dose from the body.

Hard Water Alkaline water containing dissolved salts that interfere with some industrial processes and prevent soap from lathering.

Hazardous Substance

1. Any material that poses a threat to human health and/or the environment. Typical hazardous substances are toxic, corrosive, ignitable, explosive, or chemically reactive.
2. Any substance designated by EPA to be reported if a designated quantity of the substance is spilled in the waters of the United States or if otherwise emitted to the environment.

Hazardous Wastes

By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (ignitability, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Hazards Analysis

The procedures involved in:

1. identifying potential sources of release of hazardous materials from fixed facilities or transportation accidents;
2. determining the vulnerability of a geographical area to a release of hazardous materials; and
3. comparing hazards to determine which present greater or lesser risks to a community.

Hazards Identification

1. Providing information on which facilities have extremely hazardous substances, what those chemicals are, and how much there is at each facility. The Process also provides information on how the chemicals are stored and whether they are used at high temperatures.
2. The process of determining whether exposure to an agent can cause an increase in the incidence of a particular adverse health effect (e.g., cancer, birth defect) and whether the adverse health effect is likely to occur in humans.

Head Space

The air space at the top of water or soil sample.

Heavy Metals

A set of metals which are commonly measured because of their high toxicity e.g., mercury, chromium, cadmium, arsenic, and lead. They can damage living things at low concentrations and tend to accumulate in the food chain.

Health and Safety Plan (HSP)

The document which prescribes the procedures to protect workers Health and Safety.

Holding Pond

A pond or reservoir, usually made of earth, built to store polluted runoff.

Host

1. In genetics, the organism, typically a bacterium, into which a gene from another organism is transplanted.
2. In medicine, an animal infected by or parasitized by another organism.

Humus

Decomposed organic material.

Hybrid

A cell or organism resulting from a cross between two unlike plant or animal cells organisms.

Hydrocarbons (HC)

Chemical compounds that consist entirely of carbon and hydrogen.

Hydrogeology

The geology of groundwater, with particular emphasis on the chemistry and movement of water.

Hydrology

The science dealing with the properties, distribution, and circulation of water.

Ignitable

Capable of burning or causing a fire.

In Vitro

1. "In glass", a test-tube culture
2. Any laboratory test using living cells taken from an organism.

In Vivo

In the living body or a plant or animal, in vivo tests are those laboratory experiments carried out on whole animals or human volunteers.

Incineration

1. Burning of certain types of solid, liquid or gaseous materials.
2. A treatment technology involving destruction of waste by controlled burning at high temperatures, e.g., burning sludge to remove the water and reduce the remaining residues to a safe, nonburnable ash which can be disposed of safely on land, in some waters or in underground locations.

Incinerator

A furnace for burning wastes under controlled conditions

Indicator

In biology, an organism, species, or community whose characteristics show the presence of specific environmental conditions.

Infiltration

1. The penetration of water through the ground surface into subsurface soil or the penetration of water from the soil into sewer or other pipes through defective joints, connections, or manhole walls.
2. A land application technique where large volumes of waste water are applied to land, allowed to penetrate the surface and percolate through the underlying soil.

Inflow

Entry of extraneous rain water into a sewer system from sources other than infiltration, such as basement drains, manholes, storm drains, and street washing.

Influent

Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.

Information File

In the Superfund program, a file that contains accurate, up-to-date documents on a Superfund site. The file is usually located in a public building such as a school, library, or city hall that is convenient for local residents.

Injection Well

A well into which fluids are injected for purposes such as waste disposal, improving the recovery of crude oil, or solution mining.

Injection Zone

A geological formation, group of formations, or part of a formation receiving fluids through a well.

Inorganic Chemicals

Chemicals which do not contain carbon and are evolved from natural, mineral sources.

Installation Restoration Program (IRP)

DOD program to investigate and remediate sites at federal facilities prior to the onset of SARA.

Intake

A measure of exposure expressed as the mass of substance in contact with the exchange boundary per unity body weight per unit time (e.g., mg/kg-day). Also termed the normalized exposure rate.

Interstitial Monitoring

The continuous surveillance of the space between the walls of an underground storage tank.

Ion

An electrically charged atom or group of atoms which can be drawn from waste water during the electrodialysis process.

Ion Exchange Treatment

A common water softening method often found on a large scale at water purification plants that removes some organics and radium by adding calcium oxide or calcium hydroxide to increase the pH to a level where the metals will precipitate out.

Ionization Chamber

A device that measures the intensity of ionizing radiation.

Irritant

A noncorrosive chemical that causes annoyance, irritation, inflammation, soreness or irritability on living tissue at the site of contact.

Irrigation

Technique for applying water or wastewater to land areas to supply the water and nutrient needs of plants.

Isotope

A variation of an element that has the same atomic number but a different weight because of its neutrons. Various isotopes of the same element may have different radioactive behaviors.

Lagoon

1. A shallow pond where sunlight, bacterial action, and oxygen work to purify wastewater; also used for the storage of wastewaters or spent nuclear fuel rods.
2. Shallow body of water, often separated from the sea by coral reefs or sandbars.

Landfills

1. Sanitary landfills are land disposal sites for nonhazardous solid wastes at which the waste is spread in layers, compacted to the smallest practical volume, and cover material applied at the end of each operating day.
2. Secure chemical landfills are disposal sites for hazardous waste. They are selected and designed to minimize the chance of release of hazardous substances into the environment.

Leachate

A liquid that results from water collecting contaminants as it trickles through wastes, agricultural pesticides or fertilizers. Leaching may occur in farming areas, feedlots, and landfills, and may result in hazardous substances entering surface water, groundwater or soil.

Leachate Collection System

A system that gathers leachate and pumps it to the surface for treatment.

Leaching

The process by which soluble constituents are dissolved and carried down through the soil by a percolating fluid.

Lead (Pb)

A heavy metal that is hazardous to health if breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations.

Lead Agency

The agency, either the EPA, federal agency, or appropriate state agency having primary responsibility and authority for planning and executing the remediation at a site. (in the case of the depot, the Corps of Engineers is the lead agency)

Level of Concern (LOC)

The concentration in air of an extremely hazardous substance above which there may be serious immediate health effects to anyone exposed to it for short periods of time.

Listed Waste

Wastes listed as hazardous under RCRA but which have not been subjected to the Toxic Characteristics Listing Process because the dangers they present are considered self-evident.

Marsh

A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or saltwater and tidal or nontidal.

Maximum Contaminant Level

The maximum permissible level of a contaminant in water delivered to any user of a public water system. MCLs are enforceable standards.

Media

Specific environments - air, water, soil - which are the subject of regulatory concern and activities.

Mercury (Hg)

A heavy metal that can accumulate in the environment and is highly toxic if breathed or swallowed.

Methane

A colorless, nonpoisonous, flammable gas created by anaerobic decomposition of organic compounds.

Method 18

An EPA test method which uses gas chromatographic techniques to measure the concentration of individual volatile organic compounds in a gas stream.

Method Spike

A sample to which a known amount of the chemical of interest is added just prior to analysis of a sample set. It is used to measure the accuracy of a method. Analysis along-side the real samples will eliminate any false negative result arising from poor lab techniques.

Microbes

Microscopic organisms such as algae, animals, viruses, bacteria, fungus, and protozoa, some of which cause diseases.

Microorganism

Living organisms so small that individually they can usually only be seen through a microscope.

Mitigation

Measures taken to reduce or alleviate adverse impacts on the environment. For example, the process of cleaning up a contaminated site in order to return it to an environmentally acceptable state.

Mobile Source

A moving producer of air pollution, mainly forms of transportation such as cars, trucks, motorcycles, airplanes.

Modeling

An investigative technique using a mathematical or physical representation of a system or theory that accounts for all or some its known properties. Models are often used to test the effect of changes of system components on the overall performance of the system.

Monitoring

Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements and/or pollutant levels in various media or in humans, animals, and other living things.

Monitoring Wells

A well installed to routinely observe groundwater levels or to systematically collect water samples and analyze these for chemical pollution.

Multiple Use

Use of land for more than one purpose; i.e., grazing of livestock, wildlife production, recreation, watershed, and timber production. Could also apply to use of bodies of water for recreational purposes, fishing, and water supply.

Mutate

To bring about a change in the genetic constitution of a cell by altering its DNA. In turn, "mutagenesis" is any process by which cells are mutated.

NA

Not Applicable or Not Analyzed

National Ambient Air Quality Standards (NAAQS)

Air quality standards established by EPA that apply to outside air.

National Emissions Standards for Hazardous Pollutants

Also known as NESHAPS, these emissions standards set by EPA for an air pollutant not covered by NAAQS that may cause an increase in deaths or in serious, irreversible, or incapacitating illness. Primary standards are designed to protect human health, secondary standards to protect public welfare.

National Oil and Hazardous Substances Contingency Plan

The federal regulation that guides determination of the sites to be corrected under the Superfund program and the program to prevent or control spills into surface waters or other portions of the environment. (Also known as NOHSCP/NCP).

National Pollutant Discharge Elimination System (NPDES)

A provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or (where delegated) a tribal government on an Indian reservation. Federal regulation which provides for a timely, effectively response by various federal agencies and other organizations to discharges and releases of hazardous substances in order to protect public health, welfare, and the environment.

National Priorities List (NPL)

EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action under Superfund. A site must be on the NPL to receive money from the Trust Fund for remedial action. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA is required to update the NPL at least once a year.

National Response Center

The federal operations center that receives notifications of all releases of oil and hazardous substances into the environment. The Center, open twenty-four hours a day, is operated by the U.S. Coast Guard, which evaluates all reports and notifies the appropriate agency.

National Response Team (NRT)

Representatives of thirteen federal agencies that, as a team, coordinate federal responses to nationally significant incidents of pollution and provide advice and technical assistance to the responding agency(ies) before and during a response action.

Natural Gas

A natural fuel containing primarily methane and ethane that occurs in certain geologic formations.

Natural Selection

The process of survival of the fittest, by which organisms that adapt to their environment survive and those that do not disappear.

Naturally Occurring Background Levels

Ambient concentrations of chemicals that are present in the environment and have not been influenced by humans (e.g., aluminum, manganese).

Necrosis

Death of plant or animal cells. In plants, necrosis can discolor areas on the plant or kill it entirely.

Neutralization

Decreasing the acidity or alkalinity of a substance by adding to it alkaline or acidic materials respectively.

New Source

Any stationary source which is built or modified after publication of final or proposed regulations that prescribe a standard of performance which is intended to apply to that type of emission source.

New Source Performance Standards (NSPS)

Uniform national EPA air emission and water effluent standards which limit the amount of pollution allowed from new sources or from existing sources that have been modified.

Nitrate

A compound containing nitrogen which can exist in the atmosphere or as a dissolved gas in water and which can have harmful effects on humans and animals. Nitrates in water can cause severe illness in infants and cows.

Nitrification

The process whereby ammonia in wastewater is oxidized to nitrite and then to nitrate by bacterial or chemical reactions.

Nitrite

1. An intermediate in the process of nitrification.
2. Nitrous oxide salts used in food preservation.

Nitrogen Dioxide (NO)

The result of nitric oxide combining with oxygen in the atmosphere. A major component of photochemical smog.

Nitrogen Oxide (NO₂)

Product of combustion from transportation and stationary sources and a major contributor to the formation of ozone in the troposphere and acid deposition.

Nitrogenous Wastes

Animal or vegetable residues that contain significant amount of nitrogen.

No-Observed-Effect-Level

In dose-response experiments, the experimental exposure level representing the highest level tested at which no effects at all were demonstrated.

Noncommunity Water System

A public water system that is not a community water system, e.g., the water supply at a camp site or national park.

Nonconventional Pollutant

Any pollutant which is not statutorily listed or which is poorly understood by the scientific community.

Nondetects

Chemicals that are not detected in a particular sample above a certain limit. This limit usually will be quantitation limit for the chemical in that sample. (Note, however, that

it is possible to detect and estimate concentrations of chemicals below the quantitation limit but above the detection limit.)

Nonionizing Electromagnetic Radiation

1. Radiation that does not change the structure of atoms but does heat tissue and may cause harmful biological effects.
2. Microwaves, radio waves, and low frequency electromagnetic fields from high voltage transmission lines.

Nonpoint Source

Pollution sources which are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet. The pollutants are generally carried off the land by stormwater runoff. The commonly used categories for nonpoint sources are: agriculture, forestry, urban, mining, construction, dams and channels, land disposal, and saltwater intrusion.

Nutrient

Any substance assimilated by living things that promotes growth. The term is generally applied to nitrogen and phosphorus in wastewater, but is also applied to other essential and trace elements.

Off-Site Facility

A hazardous waste treatment, storage or disposal area that is located at a place away from the generating site.

On-Scene Coordinator (OSC)

The predesignated EPA, Coast Guard, or Department of Defense official who coordinates and directs Superfund removal actions or Clean Water Act oil- or hazardous-spill corrective actions.

On-Site Facility

A hazardous waste treatment, storage or disposal area that is located on the generating site.

Open Burning

Uncontrolled fires in an open dump.

Open Dump

An uncovered site used for disposal of waste without environmental controls.

Operable Unit

Discrete area within a project site identified on the basis of similarity of contaminants, geology, hydrology, or other factors undertaken as part of a Superfund site cleanup. A typical operable unit would be removing drums and tanks from the surface of a site.

Operation and Maintenance

1. Activities conducted at a site after a Superfund site action is completed to ensure that the action is effective and operating properly.
2. Actions taken after construction to assure that facilities constructed to treat waste water will be properly operated, maintained, and managed to achieve efficiency levels and prescribed effluent limitations in an optimum manner.

Organics

Chemicals which contain the element carbon and are man-made.

Organic Chemicals/Compounds

Animal or plant-produced substances containing mainly carbon, hydrogen, and oxygen.

Organic Matter

Carbonaceous waste contained in plant or animal matter and originating from domestic or industrial sources.

Organism

Any living thing.

Organophosphates

Pesticide chemicals that contain phosphorus; used to control insects. They are short-lived, but some can be toxic when first applied.

Organotins

Chemical compounds used in antifoulant paints to protect the hulls of boats and ships, buoys, and dock pilings from marine organisms such as barnacles.

Osmosis

The tendency of a fluid to pass through a permeable membrane such as the wall of a living cell into a less concentrated solution so as to equalize the concentrations on both sides of the membrane.

Outfall

The place where an effluent is discharged into receiving waters.

Overburden

The rock and soil cleared away before mining.

Overland Flow

A land application technique that cleanses waste water by allowing it to flow over a sloped surface. As the water flows over the surface, the contaminants are removed and the water is collected at the bottom of the slope for reuse.

Overturn

The period of mixing (turnover), by top to bottom circulation, of previously stratified water masses. This phenomenon may occur in spring and/or fall, or after storms. It results in a uniformity of chemical and physical properties of the water at all depths.

Oxidant

A substance containing oxygen that reacts chemically in air to produce a new substance. The primary ingredient of photochemical smog.

Oxidation

1. The additional of oxygen which breaks down organic waste or chemicals such as cyanides, phenols, and organic sulfur compounds in sewage by bacterial and chemical means.
2. Oxygen combining with other elements.
3. The process in chemistry whereby electrons are removed from a molecule.

Oxidation Pond

A man-made lake of body of water in which waste is consumed by bacteria. It is used most frequently with other waste-treatment processes. An oxidation pond is basically the same as a sewage lagoon.

Oxygenated Solvent

An organic solvent containing oxygen as part of the molecular structure. Alcohols and ketones are oxygenated compounds often used as paint solvents.

Ozone (O₃)

Found in two layers of the atmosphere, the stratosphere and the troposphere. In the stratosphere (the atmospheric layer beginning 7 to 10 miles above the earth's surface) ozone is a form of oxygen found naturally which provides a protective layer shielding the earth from ultraviolet radiation's harmful health effects on humans and the environment. In the troposphere (the layer extending up 7 to 10 miles from the earth's surface), ozone is a chemical oxidant and major component of photochemical smog. Ozone can seriously affect the human respiratory system and is one of the most prevalent and widespread of all the criteria pollutants for which the Clean Air Act required EPA to set standards. Ozone in the troposphere is produced through complex chemical reactions of nitrogen oxides, which are among the primary pollutants emitted by combustion sources; hydrocarbons, released into the atmosphere through the combustion, handling and processing of petroleum products; and sunlight.

Ozone Depletion

Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to biological life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbons or halons) which break down when they reach the stratosphere and catalytically destroy ozone molecules.

Particulate Loading

The mass of particulates per unit volume of air or water.

Particulates

Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog, found in air or emissions.

PCBs

A group of toxic, persistent chemicals (polychlorinated biphenyls) used in transformers and capacitors for insulating purposes and in gas pipeline systems as a lubricant. Further sale of new use was banned by law in 1979.

Percent Recovery

The amount of chemical found expressed as the percent of chemical added from analysis of Method Spike sample. Results indicate the accuracy of the analytical technique.

Percolation

The movement of water downward and radially through soil layers, usually continuing downward to the groundwater.

Permeability

The rate at which liquids pass through soil or other materials in a specified direction.

Permit

An authorization, license, or equivalent control document issued by EPA or an approved state agency to implement the requirements of an environmental regulation; e.g., a permit to operate a wastewater treatment plant or to operate a facility that may generate harmful emissions.

Persistence

Refers to the length of time a compound, once introduced into the environment, stays there. A compound may persist for less than a second or indefinitely.

Pesticide

Substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Also, any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. Pesticides can accumulate in the food chain and/or contaminate the environment if misused.

pH

A measure of the acidity or alkalinity of a liquid or solid material.

Phenols

Organic compounds that are by-products of petroleum refining, tanning, and textile, dye, and resin manufacturing. Low concentrations cause taste and odor problems in water; higher concentrations can kill aquatic life and humans.

Phosphates

Certain chemical compounds containing phosphorus.

Phosphorus

An essential chemical food element that can contribute to the eutrophication of lakes and other water bodies. Increased phosphorus levels result from discharge of phosphorus-containing materials into surface water.

Physical and Chemical Treatment

Processes generally used in large-scale waste-water treatment facilities. Physical processes may involve air-stripping or filtration. Chemical treatment includes coagulation, chlorination, or ozone addition. The term can also refer to treatment processes, treatment of toxic materials in surface waters and groundwaters, oil spills, and some methods of dealing with hazardous materials on or in the ground.

Pile

1. A heap of waste
2. The fuel element in a nuclear reactor.

Plankton

Tiny plants and animals that live in water.

Plastics

Nonmetallic compounds that result from a chemical reaction, and are molded or formed into rigid or pliable construction materials or fabrics.

Plugging

1. The act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.
2. Stopping a leak or sealing off a pipe or hose.

Plume

1. A visible or measurable discharge or a contaminant from a given point of origin. Can be visible or thermal in water, or visible in the air as, for example, a plume of smoke.
2. The area of measurable and potentially harmful radiation leaking from a damaged reactor.
3. The distance from a toxic release considered dangerous for those exposed to the leaking fumes.

Point Source

A stationery location or fixed facility from which pollutants are discharged or emitted. Also, any single identifiable source of pollution, e.g., a pipe, ditch, ship, ore pit, factory smokestack.

Pollutant

Generally, any substance introduced into the environment that adversely affects the usefulness of a resource.

Pollutant Standard Index (PSI)

Measure of adverse health effects of air pollution levels in major cities.

Pollution

Generally, the presence of matter or energy whose nature, location or quantity produces undesired environmental effects. Under the Clean Water Act, for example, the term is defined as the man-made or man-induced alteration of the physical, biological, and radiological integrity of water.

Polyelectrolytes

Synthetic chemicals that help solids to clump during sewage treatment.

Polymer

Basic molecular ingredients in plastic.

Polyvinyl Chloride (PVC)

A tough, environmentally indestructible plastic that releases hydrochloric acid when burned.

Population

A group of interbreeding organisms of the same kind occupying a particular space. Generically, the number of humans or other living creatures in a designated area.

Positive Data

Analytical results for which measurable concentrations (i.e., above a quantitation limit) are reported. May have data qualifiers attached.

Post-Closure

The time period following the shutdown of a waste management or manufacturing facility. For monitoring purposes, this is often considered to be thirty years.

Potable Water

Water that is safe for drinking and cooking.

Potentially Responsible Party (PRP)

Any individual or company - including owners, operators, transporters or generators - potentially responsible for, or contributing to, the contamination problems at a Superfund site. Whenever possible, EPA requires PRPs, through administrative and legal actions, to clean up hazardous waste sites they have contaminated.

PPM/PPB

Parts per million/parts per billion, a way of expressing tiny concentrations of pollutants in air, water, soil, human tissue, food, or other products.

Precipitate

A solid that separates from a solution because of some chemical or physical change.

Precipitation

Removal of solids from liquid waste so that the hazardous solid portion can be disposed of safely; removal of particles from airborne emissions.

Precipitators

Air pollution control devices that collect particles from an emission.

Precursor

In photochemical terminology, a compound such as a volatile organic compound (VOC) that "precedes" an oxidant. Precursors react in sunlight to form ozone or other photochemical oxidants.

Preliminary Assessment

The process of collecting and reviewing available information about a known or suspected waste site or release.

Pretreatment

Processes used to reduce, eliminate, or alter the nature of wastewater pollutants from nondomestic sources before they are discharged into publicly owned treatment works.

Prevention

Measures taken to minimize the release of wastes to the environment.

Prevention of Significant Deterioration (PSD)

EPA program in which state and/or federal permits are required that are intended to restrict emissions for new or modified sources in places where air quality is already better than required to meet primary and secondary ambient air quality standards.

Primary Drinking Water Regulation

Applies to public water systems and specifies a contaminant level, which, in the judgment of the EPA Administrator, will have no adverse effect on human health.

Primary Waste Treatment

First steps in wastewater treatment; screens and sedimentation tanks are used to remove most material that floats or will settle. Primary treatment results in the removal of about 30 percent of carbonaceous biochemical oxygen demand from domestic sewage.

Process Weight

Total weight of all materials, including fuel, used in a manufacturing process. It is used to calculate the allowable particulate emission rate from the process.

Proposed Action Plan (PAP)

Plan presented to the public describing the preferred alternative for a site.

Proteins

Complex nitrogenous organic compounds of high molecular weight that contain amino acids as their basic unit and are essential for growth and repair of animal tissue. Many proteins are enzymes.

Public Health Evaluation

A quantitative assessment of the potential risks to human as a result to specific chemical exposure.

Public Works System

A system that provides piped water for human consumption to at least fifteen service connections or regularly serves twenty-five individuals.

Publicly Owned Treatment Works

A waste-treatment works owned by a state, unit of local government, or Indian tribe, usually designed to treat domestic wastewaters. Also known as POTWs.

Pumping Station

Mechanical devices installed in sewer or water systems or other liquid-carrying pipelines that move the liquids to a higher level.

Purge (wells)

Pumping out well water to remove drilling debris or impurities; also conducted to bring fresh groundwater up into the casing for sample collection. The latter is a means of collecting a representative water sample from the aquifer being investigated.

Quality Assurance Project Plan

Describes the policy, organization, functional activities, and quality assurance and quality control protocols necessary to achieve DQOs dictated by the intended use of the data (RI/FS Guidance).

Quality Assurance/Quality Control

A system of procedures, checks, audits, and corrective actions to ensure that all EPA research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality.

Quantitation Limit

The lowest level at which a chemical may be accurately and reproducibly quantitated. Usually equal to the detection limit multiplied by a factor of 3 to 5, but varies between chemicals and between samples.

RCRA

The Resource Conservation and Recovery Act

Raw Sewage

Untreated wastewater

Reasonably Available Control Technology (RACT)

The lowest emissions limit that a particular source is capable of meeting by the application of control technology that is both reasonably available, as well as technologically and economically feasible. RACT is usually applied to existing sources in nonattainment areas and most cases is less stringent than new source performance standards.

Receiving Waters

A river, lake, ocean, stream or other watercourse into which wastewater or treated effluent is discharged.

Recharge

The process by which water is added to a zone of saturation, usually by percolation from the soil surface, e.g., the recharge of an aquifer.

Recharge Area

A land area in which water reaches to the zone of saturation from surface infiltration, e.g., an area where rainwater soaks through the earth to reach an aquifer.

Recommended Maximum Contaminant Level (RMCL)

The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on human health would occur, and which includes an adequate margin of safety. Recommended levels are nonenforceable health goals.

Record of Decision (ROD)

A public document that explains which cleanup alternative(s) will be used at National Priorities List sites where, under CERCLA, Trust Funds pay for the cleanup.

Recycle/Reuse

The process of minimizing the generation of waste by recovering usable products that might otherwise become waste. Examples are the recycling of aluminum cans, wastepaper, and bottles.

Reference Dose (RfD)

Toxicity value used most often in evaluating noncarcinogenic effects resulting from exposures at Superfund sites. See specific entries for chronic RfDs, subchronic RfDs, and developmental RfDs.

Refuse Reclamation

Conversion of solid waste into useful products, e.g., composting organic wastes to make soil conditioners or separating aluminum and other metals for melting and recycling.

Regeneration

Manipulation of individual cells or masses of cells to cause them to develop into whole plants.

Regional Response Team (RRT)

Representatives of federal, local, and state agencies who may assist in coordination of activities at the request of the On-Scene Coordinator before and during a Superfund response action.

Remedial Action (RA)

The actual construction or implementation phase of a Superfund site cleanup that follows remedial design.

Remedial Design

A phase of remedial action that follows the remedial investigation/feasibility study and includes development of engineering drawings and specifications for a site cleanup.

Remedial Investigation

An in-depth study designed to gather the data necessary to determine the nature and extent of contamination at a Superfund site; establish criteria for cleaning up the site; identify preliminary alternatives for remedial actions; support the technical and cost analyses of the alternatives. The remedial investigation is usually done with the feasibility study. Together, they are usually referred to as the "RI/FS".

Remedial Project Manager (RPM)

The EPA or state official responsible for overseeing remedial action at a site. Accountable for the technical quality, schedule, and cost of work.

Remedial Response

A long-term action that stops or substantially reduces a release or threat of a release of hazardous substances that is serious but not an immediate threat to public health.

Remediation

Any reduction in the potential of contaminant to impact either the environment or human health.

Removal Action

Short-term immediate actions taken to address releases of hazardous substances that require expedited response.

Reportable Quantity (RQ)

The quantity of a hazardous substance that triggers reports under CERCLA. If a substance is released in amounts exceeding its RQ the release must be reported to the National Response Center, the SERC, and community emergency coordinators for areas likely to be affected.

Reservoir

Any natural or artificial holding are used to store, regulate, or control water.

Residual

Amount of a pollutant remaining in the environment after a natural or technological process has taken place, e.g., the sludge remaining after initial wastewater treatment, or particulates remaining in air after the air passes through a scrubbing or process.

Resistance

For plants and animals, the ability to withstand poor environmental conditions and/or attacks by chemicals or disease. The ability may be inborn or developed.

Resource

A person, thing, or action needed for living or to improve the quality of life.

Resource Recovery

The process of obtaining matter or energy from materials formerly discarded.

Response Action

A CERCLA-authorized action involving either a short-term removal action or a long-term removal response that may include but is not limited to: removing hazardous materials from a site to an EPA-approved hazardous waste facility for treatment, containment, or destruction; containing the waste safely on-site; destroying or treating the waste on-site; and identifying and removing the source of groundwater contamination and halting further migration of contaminants.

Restoration

Measures taken to return a site to previolation conditions.

Risk Assessment

The qualitative and quantitative evaluation performed in an effort to define the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific pollutants.

Risk Communication

The exchange of information about health or environmental risks between risk assessors, risk managers, the general public, news media, interest groups, etc.

Risk Management

The process of evaluating alternative regulatory and non-regulatory responses to risk and selecting among them. The selection process necessarily requires the consideration of legal, economic and social factors.

River Basin

The land area drained by a river and its tributaries.

Routine Analytical Services (RAS)

The set of Contact Laboratory Program (CLP) analytical protocols that are used to analyze most Superfund site samples. These protocols are provided in the EPA Statement of Work for the CLP (SOW for Inorganics; SOW for Organics) and must be followed by every CLP laboratory.

Run-Off

That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface-water. It can carry pollutants from the air and land into the receiving waters.

SAAD

Sacramento Army Depot

SARA

The Superfund Amendments and Reauthorization Acts of 1986.

Salinity

The degree of salt in water.

Sampling and Analysis Plan

Consists of a Quality Assurance Project Plan (QAPP) and a Field Sampling Plan (FSP).

Saturated Zone

A subsurface area in which all pores and cracks are filled with water under pressure equal to or greater than that of the atmosphere.

Screen

Perforations in a well casing and usually located near the bottom of the well or at selected depths to tap perched aquifers.

Screening

Use of screens to remove coarse floating and suspended solids from sewage.

Sedimentation

Letting solids settle out of wastewater by gravity during wastewater treatment.

Sediments

Soil, sand and minerals washed from land into water usually after rain. They pile up in reservoirs, rivers and harbors, destroying fish-nesting areas and holes of water animals, and clouding the water so that needed sunlight might not reach aquatic plants. Careless farming, mining, and building activities will expose sediment materials, allowing them to be washed off the land after rainfalls.

Semiconfined Aquifer

An aquifer that is partially confined by a soil layer (or layers) of low permeability through which recharge and discharge can occur.

SESOIL

A computer model for predicting the movement/transport of a chemical in the vadose zone.

Silt

Fine particles of sand or rock that can be picked up by the air or water and deposited as sediment.

Sinking

Controlling oil spills by using an agent to trap the oil and sink it to the bottom of the body of water where the agent and the oil are biodegraded.

Site Inspection

The collection of information from a Superfund site to determine the extent and severity of hazards posed by the site. It follows and is more extensive than a preliminary assessment. The purpose is to gather information necessary to score the site, using the Hazard Ranking System, and to determine if the site presents an immediate threat that requires prompt removal action.

Slope Factor

A plausible upper-bound estimate of the probability of a response per unit intake of a chemical over a lifetime. The slope factor is used to estimate an upper-bound probability of an individual developing cancer as a result of a lifetime of exposure to a particular level of a potential carcinogen.

Sludge

A semisolid residue from any of a number of air or water treatment processes. Sludge can be a hazardous waste.

Slurry

A watery mixture of insoluble matter that results from some pollution control technique.

Soil Condition

An organic material like humus or compost that helps soil absorb water, build a bacterial community, and distribute nutrients and minerals.

Soil Gas

Gaseous elements and compounds that occur in the small spaces between particles of the earth and soil. Such gases can move through or leave the soil or rock, depending on changes in pressure or temperature.

Soil Profile

A vertical section of the soil from the surface through all its horizons.

Sole Source Aquifer

An aquifer that supplies 50 percent or more of the drinking water of an area.

Solid Waste

Nonliquid, nonsoluble materials ranging from municipal garbage to industrial wastes that contain complex, and sometimes hazardous, substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid wastes also refers to liquids and gases in containers.

Solid Waste Management

Supervised handling of waste materials from their source through recovery processes to disposal.

Solid Waste Disposal

The final placement of refuse that is not salvaged or recycled.

Solidification and Stabilization

Removal of wastewater from a waste or changing it chemically to make the waste less permeable and susceptible to transport by water.

Solvent

Substance (usually liquid) capable of dissolving or dispersing one or more other substances.

Sorption

The action of soaking up or attracting substances. A process used in many pollution control systems.

Species

A reproductively isolated aggregate of interbreeding populations of organisms.

Stabilization

Conversion of the active organic matter in sludge into inert, harmless material.

Stagnation

Lack of motion in a mass of air or water, which tends to hold pollutants.

Standards

Prescriptive norms which govern action and actual limits on the amount of pollutants or emissions produced. EPA, under most of its responsibilities, establishes minimum standards. State are allowed to be stricter.

State Emergency Response Commission (SERC)

Commission appointed by each state governor according to the requirements of SARA Title III. The SERC's designated emergency planning districts appoint local emergency planning committees, and supervise and coordinate their activities.

Statements of Work for the CLP

These documents specify the instrumentation, sample handling procedures, analytical parameters and procedures, required quantitation limits, QC requirements, and report format to be used by CLP laboratories. The SOW also contains the TCL.

Stationary Source

A fixed, nonmoving producer of pollution, mainly power plants and other facilities using industrial combustion processes.

Storage

Temporary holding of waste pending treatment or disposal. Storage methods include containers, tanks, waste piles, and surface impoundments.

Storm Sewer

A system of pipes (separate from sanitary sewers) that carry only water runoff from building and land surfaces.

Stratification

Separating into layers.

Stratosphere

The portion of the atmosphere that is 10 to 25 miles above the Earth's surface.

Strip-Mining

A process that uses machines to scrape soil or rock away from mineral deposits just under the earth's surface.

Sump

A pit or tank that catches liquid runoff for drainage or disposal.

Sump Pump

A mechanism for removing water or wastewater from a sump or wet well.

Superfund

The program operated under the legislative authority of CERCLA and SARA that funds and carries out the EPA solid waste emergency and long-term removal remedial activities. These activities include establishing the National Priorities List, investigating sites for inclusion on the list, determining their priority level on the list, and conducting and/or supervising the ultimately determined cleanup and other remedial actions.

Surface Impoundment

Treatment, storage, or disposal of liquid hazardous wastes in ponds.

Surface Water

All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors which are directly influenced by surface water.

Surveillance System

A series of monitoring devices designed to determine environmental quality.

Target Compound List

Developed by EPA for Superfund site sample analyses. The TCL is a list of analytes (34 volatile organic chemicals, 65 semivolatile organic chemicals, 19 pesticides, 7 polychlorinated biphenyls, 23 metals, and total cyanide) for which every Superfund sample must be analyzed using the RAS of the EPA Contract Laboratory Program.

Technical Review Committee (TRC)

A group of individuals who serve as a review board for significant reports and monitors progress of the study.

Threshold Limit Value (TLV)

Represents the air concentrations of chemical substances to which it is believed that workers may be exposed daily without adverse effect.

Threshold Planning Quantity

A quantity designated for each chemical on the list of extremely hazardous substances that triggers notification by facilities to the state emergency response commission that such facilities are subject to emergency planning under SARA Title III.

Tolerances

The permissible residue level for pesticides in raw agricultural produce and processed foods. Whenever a pesticide is registered for use on a food or a feed crop, a tolerance (or exemption from the tolerance equipment) must be established. EPA establishes the tolerance levels, which are enforced by the Food and Drug Administration and the Department of Agriculture.

Total Exposure Point

A point of potential exposure to substances from more than one exposure pathway.

Total Suspended Solids (TSS)

A measure of THE suspended solids in wastewater, effluent, or water bodies, determined by using tests for "total suspended nonfilterable solids."

Toxic

Capable of producing a harmful effect to living organisms.

Toxic Chemical Release Form

Information form required to be submitted by facilities that manufacture, process, or use (in quantities above a specific amount) chemicals listed under SARA Title III.

Toxic Pollutants

Materials contaminating the environment that cause death, disease, birth defects in organisms that ingest or absorb them. The quantities and length of exposure necessary to cause these effects can vary widely.

Toxic Substance

A chemical or mixture that may present an unreasonable risk of injury to health or the environment.

Toxicant

A poisonous agent that kills or injures animal or plant life.

Toxicity

The degree of danger posed by a substance to animal or plant life.

Toxicology

The science and study of poisons control.

Transpiration

The process by which water vapor is lost to the atmosphere from living plants. The term can also be applied to the quantity of water thus dissipated.

Treatment, Storage, and Disposal Facility

Site where a hazardous substance is treated, stored, or disposed. TSD facilities are regulated by EPA and states under RCRA.

Trichloroethylene (TCE)

A stable, low boiling colorless liquid, toxic by inhalation. TCE is used as a solvent, metal degreasing agent, and in other industrial applications.

Trust Fund (CERCLA)

A fund set up under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to help pay for cleanup of hazardous waste sites and for legal action to force those responsible for the sites to clean them up.

Turbidimeter

A device that measures the amount of suspended solids in a liquid.

Turbidity

1. Haziness in air caused by the presence of particles and pollutants.
2. A similar cloudy condition in water due to suspended silt or organic matter.

Unconfined Aquifer

An aquifer whose upper level can extend to ground surface.

Underground Storage Tanks

A tank located all or partially under ground that is designed to hold gasoline or other petroleum products or chemical solutions.

Underground Sources of Drinking Water

As defined in the UIC program, this term refers to aquifers that are currently being used as a source of drinking water, and those that are capable of supplying a public water system. They have a total dissolved solids content of 10,000 milligrams per liter or less, and are not "exempted aquifers."

Unsaturated Zone

The area above the water table where the soil pores are not fully saturated, although some water may be present.

Urban Runoff

Stormwater from city streets and adjacent domestic or commercial properties that may carry pollutants of various kinds into the sewer systems and/or receiving waters.

Vapor

The gaseous phase of substances that are liquid or solid at atmospheric temperature and pressure, e.g., steam.

Vapor Capture System

Any combination of hoods and ventilation system that captures or contains organic vapors in order that they may be directed to an abatement or recovery device.

Vaporization

The change of a substance from liquid to a gas.

Variance

Government permission for a delay or exception in the application of given law, ordinance, or regulation.

Ventilation/Suction

The act of admitting fresh air into a space in order to replace stale or contaminated air; achieved by blowing air into the space. Similarly, suction represents the admission of fresh air into an interior space by lowering the pressure outside of the space, thereby drawing the contaminated air outward.

Volatile

Description of any substance that evaporates readily.

Volatile Organic Compound (VOC)

Carbon containing liquids or gases that often contain halogens such as chlorine, bromine, or fluorine. If not already a gas, these compounds are typically able to evaporate or vaporize at or near room temperature.

Waste

1. Unwanted materials left over from a manufacturing process.
2. Refuse from places of human or animal habitation.

Waste Treatment Plant

A facility containing a series of tanks, screens, filters and other processes by which pollutants are removed from water.

Wastewater

The spent or used water from individual homes, a community, a farm, or an industry that contains dissolved or suspended matter.

Wastewater Operations and Maintenance

Actions taken after construction to assure that facilities constructed to treat wastewater will be properly operated, maintained, and managed to achieve efficiency levels and prescribed effluent levels in an optimum manner.

Water Pollution

The presence in water of enough harmful or objectionable material to damage the water's quality.

Water Quality Criteria

Specific levels of water quality which, if reached, are expected to render a body of water suitable for its designated use. The criteria are based on specific levels of pollutants that would make the water harmful if used for drinking, swimming, farming, fish production, or industrial processes.

Water Quality Standards

State-adopted and EPA-approved ambient standards for water bodies. The standards cover the use of the water body and the water quality criteria which must be met to protect the designated use or uses.

Water Solubility

The maximum concentration of a chemical compound which can result when it is dissolved in water. If a substance is water soluble it can very readily disperse through the environment.

Water Supplier

A person who owns or operates a public water system.

Water Supply System

The collection, treatment, storage, and distribution of potable water from source to consumer.

Water Table

The top of the saturated zone where unconfined groundwater is under atmospheric pressure.

Watershed

The land area that drains into a stream.

Weight of Evidence

An EPA classification system for characterizing the extent to which the available data indicate that an agent is a human carcinogen.

Well

A bored, drilled, or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension and whose purpose is to reach underground supplies or oil, or to store or bury fluids below ground.

Well Injection

The subsurface emplacement of fluids in a well.

Well Log

A record of installation of a well. It includes construction specifications of the well, depth, owner, location, a description of the profile, and it is prepared by the well driller. Well log records are maintained by the State Department of Water Resources, some county agencies, and the U.S. Geological Service.

Well Plug

A watertight and gastight seal installed in a bore hole or well to prevent movement of fluids.

Wetlands

An area that is regularly saturated by surface or groundwater and subsequently is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include: swamps, bogs, fens, marshes, and estuaries.

Wildlife Refuge

An area designated for the protection of wild animals, within which hunting and fishing are either prohibited or strictly controlled.

Withdrawal

Water pumped out of a well.

Wood-Burning Stove Pollution

Air pollution caused by emissions of particulate matter, carbon monoxide, total suspended particulates, and polycyclic organic matter from wood-burning stoves.

Working Level (WL)

A unit of measure for documenting exposure to radon decay products. One working level is equal to approximately 200 picocuries per liter.

Working Level Month (WLM)

A unit of measure used to determine cumulative exposure to radon.

List of Acronyms

AAFES	Army and Air Force Exchange Service
AAQS	Ambient Air Quality Standards
ACBM	Asbestos Containing Building Material
ACOE	U.S. Army Corps of Engineers
ADP	Automated Data Processing
AEC	Army Environmental Center
AEHA	Army Environmental Hygiene Agency
AFB	Air Force Base
AFRTS	Armed Forces Radio and Television Stations
ALC	Air Logistics Centers
AMC	U.S. Army Materiel Command
AMCCOM	U.S. Army Armament, Munitions and Chemical Command
AR	Army Regulation
ARARs	Applicable or Relevant and Appropriate Requirements
ARCOM	Army Reserve Command
BASOPS	Base Operations
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BDAT	Best Demonstrated Available Technology
BEC	BRAC Environmental Coordinator
BMPs	Best Management Practices
BRAC	Base Closure and Realignment Act of 1988 and Defense Base Closure and Realignment Act of 1990, collectively
BTC	Base Transition Coordinator
Cal/EPA	California Environmental Protection Agency
CARC	Chemical Agent Resistant Coatings
CAMU	Corrective Action Management Unit
CDFG	California Department of Fish and Game
CECOM	Communications/Electronics Command
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFC	chlorofluorocarbons
CFR	Code of Federal Regulations
CHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
CMH	Chief of Military History
CNDDB	California Natural Diversity Data Base

List of Acronyms

CPO	Civilian Personnel Office
CRP	Community Relations Plan
CSUS	California State University, Sacramento
DARCOM	U.S. Army Materiel Development and Readiness Command
DBOF	Defense Business Operations Fund
DD	Decision Document
DDRW	Defense Distribution Region West
DESCOM	U.S. Army Depot System Command
DFAS	Defense Finance and Accounting Service
DIOM	Directorate for Information Management
DLA	Defense Logistics Agency
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
DTSC	Department of Toxic Substances Control
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EDC	Economic Development Conveyance
EEO	Equal Employment Opportunity
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ERCs	Emission Reduction Credits
ESC	Executive Steering Committee
EVMD	Environmental Management Division
FEMA	Federal Emergency Management Agency
FFA	Federal Facility Agreement
FNSI	Finding of No Significant Impact
FOCUS	Future Opportunities, Careers, and Ultimate Success
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FPMRs	Federal Property Management Regulations
FRG	Final Remediation Goal
FS	Feasibility Study
FWS	U.S. Fish and Wildlife Service
GSA	General Services Agency
HEPCCP	Hazmat Emergency Prevention Control and Countermeasure Plan
HHS	Department of Health and Human Services
HQDA	Headquarters, Department of the Army

List of Acronyms

HUD	Housing and Urban Development
HWCSA	Hazardous Waste Container Storage Area
IDW	Investigation-Derived Waste
IOC	Industrial Operations Command
IRP	Installation Restoration Program
ISCP	Installation Spill Contingency Plan
ISP	Installation Spill Plan
IWTP	Industrial Wastewater Treatment Plant
JPA	Joint-Powers Agency
JSWG	Joint Service Working Group
LAN	Local Area Network
LPG	Liquid Petroleum Gas
LtG	Lieutenant general
LTM	Long-term Monitoring
MCL	Maximum Contamination Level
MER	Management and Employee Relations
MSDS	Material Safety Data Sheets
MSL	Mean Sea Level
MWR	Morale, Welfare, and Reform
NAF	Non-Appropriated Fund
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NPRDC	Navy Personnel Research and Development Center
NRC	Nuclear Regulatory Commission
OEA	Office of Economic Adjustment
OHP	Office of Historic Preservation
OU	Operable Unit
PA	Preliminary Assessment
PAO	Public Affairs Officer
PAS	Preliminary Assessment Screening
PCBs	Polychlorinated biphenyls
PCE	Tetrachloroethene

List of Acronyms

PCS	Permanent Change of Station
POL	Petroleum, Oil, and Lubricant
POTW	Public owned treatment works
ppb	Parts per billion
PPE	Personal Protective Equipment
PPP	Priority Placement Program
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
REC	Record of Environmental Consideration
RFA	RCRA Facility Assessment
RFP	Request for Proposal
RI	Remedial Investigation
RIF	Reduction in force
ROA	Report of Availability
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SADA	Sacramento Army Depot Activity
SARA	Superfund Amendments and Reauthorization Act
SDS	Standard Depot System
SETA	Sacramento Employment and Training Agency
SHPO	State Historic Preservation Officer
SHRA	Sacramento Housing and Redevelopment Agency
SLUG CP	Slug Control Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SOP	Standard Operating Procedures
SPCC	Spill Prevention Contingency and Countermeasures Plan
SPD	Special Planning District
SWMU	Solid Waste Management Unit
SWP ³	Storm Water Pollution Prevention Plan

List of Acronyms

TASA	Television-Audio Support Activity
TCE	Trichloroethylene (Trichloroethene)
TDA	Table of Distribution and Allowances
TMDE	Test, Measurement, and Diagnostic Equipment
TPH	Total Petroleum Hydrocarbons
TQM	Total Quality Management
TRC	Technical Review Committee
TSD	Treatment, Storage and Disposal
USAISC	U.S. Army Information Systems Command
USATHAMA	U.S. Army Toxic and Hazardous Materials Agency
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
UV	Ultraviolet
UXO	Unexploded Ordnance
VSIP	Voluntary Separation Incentive Pay
VOC	Volatile Organic Compounds